BEFORE THE MAUI PLANNING COMMISSION

COUNTY OF MAUI

STATE OF HAWAII

In the Matter of the Application of: GOODFELLOW BROS. LLC To Obtain a State Land Use Commission Special Permit for the Temporary Processing of Rocks and Boulders, and Stockpiling for Construction and Sale in the State and County Agricultural Districts at 1102 Waianukole Street, Launiupoko, Island of Maui, Hawaii, TMK (2) 4-7-014:010.	DOCKET NO. SUP220210001 Goodfellow Bros. LLC (T. Furukawa)

DEPARTMENT OF PLANNING
REPORT AND RECOMMENDATION
AUGUST 8, 2023 MEETING

DEPARTMENT OF PLANNING
COUNTY OF MAUI
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HI. 96793

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DESCRIPTION OF THE PROJECT

Goodfellow Bros. LLC is requesting a State Land Use Commission Special Permit (SUP2) for the use of the property for the temporary crushing, storage, and sale of rocks and boulders for construction use. The project site is approximately 12.804 acres in size and is located at 1102 Waianukole Street in Launiupoko, Maui, Hawaii, at TMK (2) 4-7-014:010. (See location map, Site Plan and site photographs attached as **Exhibits 1-3**.) The property is located just makai of the Lahaina Bypass and mauka of Waianukole Street and the Honoapiilani Highway. The property is owned by MR251011 Investment, LLC, a Goodfellow Bros. LLC subsidiary.

The operations will involve extracting, crushing, and processing rocks and boulders located on the property for use as aggregate for local construction. The operation will also accept rocks and boulders from offsite for processing and stockpiling. Stockpiles of the aggregate material will be temporarily stored onsite until purchased and thereafter transported offsite for use within the community. The property will serve as a location to manage material to support Goodfellow Brothers' work and projects in West Maui. Rock crushing will be limited to no more than 30 days per calendar year.

Equipment that will be utilized to process the rock and aggregate include heavy equipment, such as excavators, loaders, crushers, screens and conveyers for stockpiling, crushing, and material screening. All equipment stored onsite will be mobile. A temporary trailer will be situated onsite and used as an office. No permanent structures are proposed to be constructed at this time.

REASON FOR MAUI PLANNING COMMISSION REVIEW

The property is located within the State Land Use 'Agricultural' District and within the County 'Agricultural' zoning district. Per Hawaii Revised Statutes Chapter 205-6(a), "Subject to this section, the County Planning Commission may permit certain "unusual and reasonable uses"

within 'Agricultural' and 'Rural' Districts other than those for which the District is classified. Any person who desires to use the person's land within an 'Agricultural' or 'Rural' District other for than an 'Agricultural' or 'Rural' use, as the case may be, may petition the Planning Commission of the County within which the person's land is located for permission to use the person's land in the manner desired."

According to Maui County Code (MCC), Chapter 19.30A.060, "mining and resource extraction" is an allowable special use in the 'Agricultural' District, as long as a special use permit is obtained. MCC 19.04.040 defines "resource extraction" as, "activities engaged in the exploration, mining and processing of natural deposits of rock, gravel, and top soil." Chapter 19.30A.060(A) of the MCC states that the State Special Permit shall fulfill the County's requirements. State Special Permits for less than 15 acres are reviewed and acted upon by the Maui Planning Commission.

DESCRIPTION OF THE PROPERTY

1. The property consists of fallow, vacant land enclosed by a fence. The topography ranges from 80 feet mean sea level in the eastern portion of the property to approximately 20 feet mean sea level near Lower Honoapiilani Highway. A drainage basin is located in the northwestern portion of the property.

2. Land Use Designations:

State Land Use District:	Agricultural
Maui Island Plan:	Outside Growth Boundaries/ Outside Protected Areas
West Maui Community Plan:	Agriculture
County Zoning:	Agricultural
Other:	Outside the SMA

3. Surrounding Uses:

North –	Agricultural lots
South –	Agricultural lot
East –	Lahaina Bypass/Agricultural lots
West –	Agricultural lot, Waianukole Street, Honoapiilani Highway, Launiupoko Wayside Park/Pacific Ocean

4. The property lies within Flood Zone 'X,' an area of minimal flooding.

5. The property is located outside of the 3.2-foot scenario sea level rise exposure area, per the Pacific Islands Ocean Observing System. See **Exhibit 4**.

6. There are no open Requests for Service (RFS) on the property.

7. There are no police reports at the subject property.

8. The subject application does not involve an action that triggers compliance with Chapter 343, Hawaii Revised Statutes, relating to Environmental Impact Statements.

PROCEDURAL MATTERS

1. On June 19, 2023, the Department emailed the Applicant to notify them of the scheduled public hearing for the SUP2.

2. On July 3, 2023, the Applicant mailed a letter of notification and location map to all owners and recorded lessees within 500 ft. of the subject property describing the application and notifying them of the scheduled hearing date, time and place by either certified or registered mail receipt, return receipt requested. A copy is on file at the Planning Department.

3. On July 7, 2023, a notice of hearing regarding the SUP2 application was published in the Maui News by the Department.

4. The subject action does not involve an action that triggers compliance to Chapter 343, Hawaii Revised Statutes, relating to Environmental Impact Statements.

REVIEWING AGENCIES

County Agencies	Comment	Exhibit Number
Department of Environmental Management (DEM), Wastewater Division	Yes	5
Response to DEM-Wastewater		6
Department of Public Works	No	7
State Agencies	**Comment**	**Exhibit Number**
Dept. of Health (DOH), Maui District	Yes	8
Response to DOH		9
Department of Land and Natural Resources, State Historic Preservation Division	Yes	11

ANALYSIS

LAND USE

1. The proposed project is in conformance with the goals, objectives and policies of the Hawaii State Plan on the economy,

2. The subject property is in the State 'Agricultural' District. The proposed use will be consistent with the District with the issuance of a SUP2.

3. As stated in the Maui County Charter, as amended in 2002:

   "The General Plan shall indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities,

policies, and implementing actions to be pursued with respect to population density; land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development."

The County of Maui 2030 General Plan *Countywide Policy Plan*, adopted in March 2010, is a comprehensive policy document for the islands of Maui County to the year 2030. The plan provides the policy framework for the *Maui Island Plan* and for updating the nine detailed Community Plans. *The Countywide Policy Plan* provides broad goals, objectives, policies, and implementing actions to achieve the County's desired direction for the future. The plan includes:

1) A vision statement and core values for the County to the year 2030

2) An explanation of the plan-making process

3) A description and background information regarding Maui County today

4) Identification of guiding principles

5) A list of countywide goals, objectives, policies, and implementing actions related to the following core themes:

   A) Protect the Natural Environment
   B) Preserve Local Cultures and Traditions
   C) Improve Education
   D) Strengthen Social and Healthcare Services
   E) Expand Housing Opportunities for Residents
   F) Strengthen the Local Economy
   G) Improve Parks and Public Facilities
   H) Diversify Transportation Options
   I) Improve Physical Infrastructure
   J) Promote Sustainable Land Use and Growth Management
   K) Strive for Good Governance
   L) Mitigate Climate Change and Work Toward Resilience

The proposed project is in keeping with the following Countywide Policy Plan goals, objectives, and policies:

Theme: Strengthen the Local Economy

Goal:

Maui County's economy will be diverse, sustainable, and supportive of community values.

Objective:

1. Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.

Policies:

a. Support economic decisions that create long-term benefits.

c. Invest in infrastructure, facilities, and programs that foster economic diversification.

d. Support and promote locally produced products and locally owned operations and businesses that benefit local communities and meet local demand.

Theme: Improve Physical Infrastructure

Goal:

Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.

Objective:

2. Improve waste disposal practices and systems to be efficient, safe, and as environmentally sound as possible.

Policies:

a. Promote sustainable waste-disposal systems and comprehensive, convenient recycling programs to reduce the flow of waste into landfills.

b. Support innovative and alternative practices in recycling solid waste and wastewater and disposing of hazardous waste.

d. Develop strategies to promote public awareness to reduce pollution and litter, and encourage residents to reduce, reuse, recycle, and compost waste materials.

Objective:

4. Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

Policies:

d. Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.

Theme: Promote Sustainable Land Use and Growth Management

Goal:

Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.

Objective:

2. Improve planning for and management of agricultural lands and rural areas.

Policies:

a. Protect prime, productive, and potentially productive agricultural lands to maintain the islands' agricultural and rural identities and economies.

4. Maui Island Plan (MIP)

The Maui Island Plan (MIP) was adopted by the County Council on December 28, 2012 (Ordinance 4004). The plan provides direction for future growth, the economy, and social and environmental decisions through the year 2030. The MIP looks comprehensively at many factors that influence the physical, social and economic development of the island. In addition to establishing a directed growth strategy to identify areas appropriate for future urbanization and revitalization, the MIP also identifies and addresses key environmental, housing, and economic development issues relevant to Maui's current and future generations. The MIP is intended by the Maui County Council, Department of Planning, and the Commission as a policy foundation for day-to-day decisions and is specifically intended to be used to assist in reviewing discretionary permits.

The MIP states:

> The Directed Growth Plan is the backbone of the MIP and it factors in population projections, prescribes and outlines how Maui will grow over the next two decades. It includes the location and general character of new development. It also accommodates growth in a manner that provides for economic development, yet protects environmental, agricultural, scenic and cultural resources, economizes on infrastructure and public services; meets the needs of residents; and protects community character.

According to the Directed Growth Plan in the MIP, the subject property is located 'Outside Growth Boundaries' and 'Outside of Protected Areas.'

The permit request is also in conformance with the following plan goals, objectives, and policies:

ECONOMIC DEVELOPMENT

Goal:

4.1 Maui will have a balanced economy composed of a variety of industries that offer employment opportunities and well-paying jobs and a business environment that is sensitive to resident needs and the island's unique natural and cultural resources.

Objective:

4.1.1 A more diversified economy.

Policies:

4.1.1.b Support the creation of new jobs and industries that provide a living wage.

Objective:

4.1.2 Increase activities that support principles of sustainability.

Policies:

4.1.2.a Support industries that are sustainable, and culturally and environmentally sensitive.

4.1.2.b Encourage and support local businesses.

4.1.2.d Support the development of economic development clusters in targeted industry sectors.

4.1.2.e Encourage all businesses to save energy, water, and other resources.

INFRASTRUCTURE AND PUBLIC FACILITIES

Goal:

6.1 Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.

Objective:

6.1.1 Meet our future solid waste needs with a more comprehensive planning and management strategy.

Policies:

6.1.1.c Divert waste from the landfills and educate the public about the recommendations of the ISWMP.

Objective:

6.1.2 Divert at least 60 percent of solid waste from the island's landfills.

Policies:

6.1.2.c Facilitate the reduction of solid waste generated by packaging, food service products, construction waste, etc.

5. West Maui Community Plan

According to the West Maui Community Plan, the property is identified as 'Agriculture' and is consistent with the land use map of the Community Plan. The proposed action is in keeping with the following Community Plan recommendations:

Goal:

Responsible stewardship of resources, culture, and character.

Policies:

2.3.10 Existing areas of open space, including agricultural lands and gulches, should be viewed as a resource to be protected and enhanced.

Objective:

4.1.1 A more diversified economy.

Policies:

4.1.1.b Support the creation of new jobs and industries that provide a living wage.

6. Maui County Zoning

The project area is zoned 'Agricultural' under Maui County Zoning MCC, Chapter 19.30A. The proposed project is not an allowable use in this zoning district. According to Maui County Code (MCC), Chapter 19.30A.060, "mining and resource extraction" is an allowable special use in the 'Agricultural' District, as long as a special use permit is obtained. MCC 19.04.040 defines "resource extraction" as, "activities engaged in the exploration, mining and processing of natural deposits of rock, gravel, and top soil." Chapter 19.30A.060(A) of the MCC states that the State Special Permit shall fulfill the County's requirements. State Special Permits for less than 15 acres are reviewed and acted upon by the Maui Planning Commission.

7. Land Use Commission Special Permit (SUP2)

As previously mentioned, the subject property is in the State 'Agricultural' District. Chapter 205-6, HRS, allows for the establishment of "unusual and reasonable" uses in the State 'Agricultural' District through the approval of an SUP2. The following guidelines are established in determining an "unusual and reasonable use":

A. The use shall not be contrary to the objectives sought to be accomplished by Chapter 205, HRS, and the rules of the Land Use Commission.

Response: *The proposed project is not anticipated to be contrary to the goals and objectives of HRS 205 and rules of the State Land Use Commission. The purpose of Chapter 205 for 'Agricultural'-designated land is to provide the greatest protection to land with a capacity for intensive cultivation. With the proposed use, surrounding land from the Makila Ranches II development will be cleared and made productive for agricultural use. The Department notes that currently, there is no approved and implemented farm plan for the property.*

B. The desired use will not adversely affect surrounding property.

Response: *The surrounding properties are large, vacant agricultural lots. Properties to the north, south and west are part of the Makila Ranches II condominiumized property regime, and are generally greater than 11 acres. To the west, across the Lahaina Bypass, is the Launiupoko area, also characterized large agricultural lots, some with farm dwellings. Mature vegetation and large setbacks along property boundaries serve to buffer noise and provide privacy to residents.*

The equipment to be used onsite for rock crushing and processing will be maintained and operated in accordance with manufacturer's recommendations. The project will implement Best Management Practices for stormwater management and protection. The project will comply with Hawaii Administrative Rules, Title 11, Chapter 46, "Community Noise Control" and Title 11, Chapter 60.1, "Air Pollution Control." Permits will be obtained from the Department of Health for the rock crushing operation, as needed. In addition, permit conditions can help alleviate impacts to surrounding properties.

C. The use would not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage and school improvements, and police and fire protection;

Response: *The proposed use will be temporary, to operate in conjunction with the clearing of the Makila Ranches II surrounding land. Rock crushing will not occur every day and will occur only between 8:00 a.m. to 5:00 p.m. The Applicant estimates that approximately five employees will be working onsite, and two vehicles will be maintained onsite. Roadway, water and drainage infrastructure needed for the proposed use currently exist. Non-potable water will be needed for dust control and potable water for drinking, as needed. The water will be provided by the Launiupoko Irrigation Company and Launiupoko Water Company. A drainage and grading plan with Best Management Practices will be developed and implemented to ensure adverse impact to downstream and adjacent properties. There is no indication that the proposed use would place a demand on public agency provision of services as it is not a population generator.*

D. Unusual conditions, trends and needs have arisen since the district boundaries and rules were established;

Response: *HRS Chapter 205 was originally adopted in the 1960s when there was active, large-scale sugarcane and pineapple cultivation. Hawaii's economy has since evolved and is comprised mostly of the tourism industry. Along with increased tourism, construction and development has increased, along with the need for construction materials. The proposed project will serve as a source of aggregate material available in West Maui. Currently, processed rock material is trucked in from other areas on Maui.*

E. The land upon which the proposed use is sought is unsuited for the uses permitted within the district.

Response: *The land upon which the proposed use is proposed is dry and not ideally suited for the uses permitted within the district. In addition, the rock crushing and processing will be temporary, and will revert back to its current state for agricultural use when the activity ends. The property does not currently have an implemented and field-verified Farm Plan. The property has a Class "B" agricultural rating, on a scale of "A" (highest productivity) to "E" (lowest productivity).*

AGRICULTURE

The property is classified as "WxB" or "Wainee very stony silty clay, 3 to 7 percent slopes" and "WyC" or "Wainee extremely stony silty clay, 7 to 15 percent slopes," according to the soil survey posted to the U.S. Department of Agriculture, Natural Resources Conservation service website. Properties and qualities are as follows:

WxB, Wainee very stony silty clay, 3 to 7 percent slopes
Depth (inches): More than 80 inches
Drainage: Well drained
Runoff class: Low
Mean Annual Precipitation (inches): 10 to 20
Elevation (feet): 0 to 1,000
Farmland classification: Not prime farmland

WyC, Wainee extremely stony silty clay, 7 to 15 percent slopes
Depth (inches): More than 80 inches
Drainage: Well drained
Runoff class: Low
Mean Annual Precipitation (inches): 15 to 24
Elevation (feet): 60 to 610
Farmland classification: Not prime farmland

As mentioned previously, according to the Hawaii Land Study Bureau, the land has a rating of Class "B" with productivity rated "A (the highest class) through "E" (the lowest class). The property does not have a field verified, implemented farm plan that covers the entire parcel.

ARCHAEOLOGICAL, HISTORIC OR CULTURAL RESOURCES

An Archaeological Inventory Survey was conducted in 2006. See **Exhibit 10**. Ten historic properties were identified, including a historic ranch wall, Lahaina Pump Ditch No. 1, mounds, water control features, terraces, slag scatter, rock wall, modified rock deposit, midden lithic scanner and terrace. None of the properties are in the proposed project area. In their letter dated December 16, 2021, SHPD determined that "no historic properties affected" (**Exhibit 11**). SHPD requested that a condition be attached to the permit that if historic resources are found during demolition and/or construction, that work will cease, the find will be protected and SHPD will be contacted.

INFRASTRUCTURE, PUBLIC FACILITIES AND SERVICES

Water – Potable water will be required for drinking and non-potable water will be needed for dust control. The subject property is currently serviced by the Launiupoko Water Company LLC for potable water and the Launiupoko Irrigation Co. for non-potable irrigation water. Infrastructure was installed as part of the Makila Ranches Phase II Subdivision. There is a horizontal tunnel source for non-potable water developed for sugarcane cultivation from a reservoir near Kauaula Stream. There should be no adverse impact to existing water service.

Wastewater – Because the proposed project does not involve dwellings or structures, there will be no onsite disposal system. There is no public wastewater disposal facility that serves the property. The property is approximately one mile away from the nearest sewer collection system in Puamana. The property is also seven miles away from the Lahaina Wastewater Treatment Facility and the fill station for R-1 water. R-1 water is available for hauling to the site, if required. The Applicant will be utilizing non-potable irrigation water from the Launiupoko Irrigation Co. Refer to the Department of Environmental Management comment letter attached as **Exhibit 5**. The State of Hawaii Department of Health Maui District Office said that the project must comply with Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems. Refer to **Exhibit 8**. Portable disposal facilities will be available onsite, as needed. There should be no adverse impacts to sewer service.

Drainage – No dwellings or impervious surfaces are proposed at this time. For the Makila Ranches Phase II Subdivision, catch basins and underground culverts were installed to direct runoff to two detention basins. One of the detention basins is located on this property. Onsite runoff from the basin flows offsite through natural drainageways and enters through the six culverts between Lower Honoapiilani Highway, and then flows to the ocean. Detention basins were designed to accommodate storm runoff so that quantities entering the culverts beneath the highway are less than pre-development conditions. The Department of Public Works did not have any comments on the proposed application. Refer to **Exhibit 7**. There should be no adverse impacts to existing drainage.

Roadways, Curbs, Gutters, and Sidewalks – The subject property is accessible off of Waianukole Street, a two-lane, two-way paved road extending north from Kai Hele Ku Street. Waianukole Street has no curbs, gutters or sidewalks. Kai Hele Ku Street is a two-lane, two-way private road that extends east-west to Lahaina Bypass and Lower Honoapiilani Highway. The Lahaina Bypass is a State two-lane major arterial that connects the west side to Central Maui. Lower Honoapiilani Highway is a two-lane, two-way road that connects Lahaina Town to Launiupoko Beachside Park. The Department of Public Works did not have any comments on the proposed application. Refer to **Exhibit 7**. There should be no adverse impacts associated with the proposed use.

Electrical, Telephone and Cable Internet – Electrical, telephone, and internet services are provided to properties in the vicinity of the proposed project by Hawaiian Electric Company, Hawaiian Telcom and Spectrum, respectively. There are overhead and/or underground utilities to each lot that were provided for the Makila Ranches Phase II Subdivision. There should be no adverse impacts to electrical, telephone and cable/internet service associated with the proposed use.

Parks – The proposed project is not a population generator, so people would not be moving to or visiting the property from elsewhere. Therefore, there should be no adverse impact to County park services. The Lahaina area has several venues for active and passive recreation. There are shoreline and boating activities at the Lahaina and Mala Harbor and adjoining beach parks. There are numerous county parks, including the Lahaina Civic Center, Lahaina Recreation Center, and Lahaina Aquatic Center, where individual and organized athletic activities are offered. The facilities consist of basketball courts, soccer and baseball fields, a swimming pool, etc. In nearby Kaanapali and Kapalua, there are several golf courses and a driving range. There are opportunities to fish, kayak, surf, swim, dive, and snorkel in the Launiupoko area.

Schools – As with parks, the project will not involve an increase in population, so there should be no adverse impacts to County schools. The State Department of Education operates several schools in the West Maui District. Students living in West Maui, in grades kindergarten to 5, would attend either Kamehameha III or Princess Nahienaena. Lahaina Intermediate serves grades 6 to 8, and Lahainaluna High School serves grades 9 to 12. There are several private schools in the area including Sacred Hearts School and Maui Preparatory Academy. The University of Hawaii - Maui College (UHMC) is located in Kahului. The UHMC Lahaina Ed Center offers limited courses either delivered "live" via a lecturer or via the distance HITS (Hawaii Interactive Television System) program. No adverse impacts on school facilities are anticipated as a result of the proposed use.

Solid Waste – The nearest refuse center for residential waste and recycling is the Olowalu Recycling and Refuse Convenience Center. The nearest commercial and residential solid waste landfill is the Central Maui Sanitary Landfill in Puunene. The Department of Environmental Management, Solid Waste Division did not have any comments on the proposed use. No adverse impacts on solid waste resources are anticipated in association with the proposed use.

Public Services – Fire protection is provided by the Lahaina Station at the Lahaina Civic Center. The nearest library is the Lahaina Public Library. The Lahaina Police Station is also located at the Lahaina Civic Center. With regard to medical services, there are privately-owned medical and dental care offices, including Maui Medical Group, Kaiser Permanente Clinic, Lahaina Physicians and West Maui Healthcare Center available in the Lahaina area. Acute, general and emergency service is available at the Maui Memorial Medical Center in Wailuku. Maui Memorial Medical Center is the only major medical facility on the island. No adverse impacts to fire, library, police or medical services are anticipated as a result of the proposed project.

SOCIO-ECONOMIC IMPACTS

According to the U.S. Census, Maui County's population has increased from 154,834 in 2000 to 164,351 in 2020. According to the *Maui Island Plan*, by 2030, the population is anticipated to be 194,630. Approximately 31,410 residents resided on the West Maui region in 2020. By 2030, the population is estimated to be 36,058.

Given the location of the islands, the state is dependent on importing goods, including, construction materials. Maui County is attempting to diversify the economy, with the goal of greater self-sustainability. The proposed use will create a locally produced source of aggregate material for construction projects and construction-related jobs. Currently, there are no such sites on the West side and processed rocks often have to be brought in from elsewhere. On a short-term basis, the project will support construction and construction-related employment. Therefore, it is anticipated that the project will not negatively impact the population or economic conditions in the region.

ENVIRONMENTAL IMPACTS

Streams, Wetlands, Flood and Tsunami – The property is located within the Launiupoko Watershed. Surface water runoff flows from higher elevations of the West Maui mountains westward in gulches and streams toward the coast. According to the Flood Insurance Rate Map, the property lies in Flood Zone 'X,' an area of minimal flooding. Therefore, a Flood Development Permit is not needed. The property is located within the tsunami evacuation zone and extreme tsunami evacuation zones. Therefore, the Applicant will need to work with the County Emergency Management Agency on evacuation procedures. No wetlands are located within the property or surrounding areas. The property is located outside of the 3.2-foot sea level rise area. No adverse impacts to streams, wetlands, flood or tsunami conditions is anticipated in association with the proposed request.

Flora and Fauna – The property and surrounding areas were planted with sugar cane. When sugar case operations ceased, the land was fallow and utilized for cattle grazing. Currently, the property consists of dried grass , dry land forest and species. In a Biological Resources Survey conducted in 2007 for the Makila Ranches II and III subdivisions, no rare or endangered flora were identified.

Fauna in the area consists of mongoose, cattle, horses, doges, mice, rats and birds. The Biological Resources Survey conducted in 2007 for the Makila Ranches Phase II and III subdivisions identified two birds that were endemic and endangered, the Nene, or Hawaiian Goose, and the Aeo or Black-Necked Stilt. The U.S. Fish and Wildlife Service down-listed the Nene from endangered to threatened. There should be no adverse impacts to existing fauna. If the Nene or Aeo were identified during operational hours, measures should be taken to ensure the protection of the birds.

Climate, Air Quality and Noise – Maui's climate can be characterized by mild temperature, moderate humidity, and trade winds. West Maui is typically hotter than other areas of the island. Air quality is generally good due to a lack of point source emissions and trade winds quickly dissipate vehicle and dust emissions from the nearby Lahaina Bypass and surrounding agricultural properties. The primary source of noise would be vehicles passing along the Lahaina Bypass or farm equipment from nearby agricultural properties. Rock crushing and processing will generate dust and noise. To mitigate adverse impacts, Best Management Practices will be implemented. Also, a Noise Permit would be obtained from the Department of Health, as applicable.

Visual Resources – The property is undeveloped and fallow. The Pacific Ocean lies to the west of the project site and there are views of Lanai from the Lahaina Bypass. From Honoapiilani Highway, to the east of the project site, the West Maui Mountains. A greenway is located to the west between the property and Lower Honoapiilani Highway. Proposed stockpiled material should not exceed 30 feet in height. There should be no hinderance of views from Lower Honoapiilani Highway and Lahaina Bypass. No adverse impacts to visual resources are anticipated in association with the proposed project.

OTHER GOVERNMENTAL APPROVALS

Other governmental approvals that are necessary are a County grading permit; a State Department of Health, Water Branch National Pollutant Discharge Elimination System Permit (NPDES); and a Department of Health Indoor and Radiological Health Branch Community Noise Permit.

TESTIMONY

As of July 25, 2023, the Department has not received any letters in protest or in support of the proposed project.

ALTERNATIVES

1. *Deferral:* The Commission may defer action to another meeting date in order to obtain additional information that will assist in their deliberation on the requests.

2. *Approval without Conditions:* The Commission may take action to approve the request without additional conditions.

3. *Approval with Conditions:* The Commission may take action to approve the requests with additional conditions.

4. *Denial:* The Commission may take action to deny the request.

CONCLUSION OF LAW

The proposed amendments comply with the applicable standards for a State Land Use Commission Special Permit as follows:

1. The proposed amendments are not contrary to the objectives sought to be accomplished by chapter 205, HRS, and the rules of the Land Use Commission.

2. The proposed use will not adversely affect surrounding properties;

3. The proposed use will not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage and school improvements, and police and fire protection;

4. No unusual conditions, trends and needs have arisen since the district boundaries and rules were established;

5. The land upon which the proposed use is sought is unsuited for the uses permitted within the district.

RECOMMENDATION

The Maui Planning Department recommends that the Maui Planning Commission approve the proposed Land Use Commission Special Permit, subject to the following conditions:

1. That the SUP shall be valid until August 31, 2028, subject to further extension by the Maui Planning Director upon a timely request for extension filed within 90 days prior to its expiration. The Director may forward the time extension request to the Commission for review and approval and may require a public hearing on the time extension by the Commission.

2. That the subject SUP shall not be transferred without the prior written approval of the Director. However, in the event that a contested case hearing preceded issuance of said SUP, a public hearing shall be held upon due published notice, including actual written notice to the last known addresses of parties to said contested case and their counsel.

3. That the Applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject SUP and shall procure at its own cost and expense, and shall maintain during the entire period of this SUP, a policy or policies of comprehensive liability insurance in the minimum amount of $1,000,000.00 naming the County of Maui as an additional named insured, insuring and defending the applicant and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this permit. Proof of a policy naming County of Maui as an additional named insured shall be submitted to the Department within 90 calendar days from the date of transmittal of the decision and order.

4. That with the submittal of a renewal request or amendment to the existing SUP, the applicant shall submit to the Department a detailed report addressing compliance with the conditions established with the subject SUP. The compliance report shall be reviewed and approved by the Department prior to renewal of the SUP. The report shall be in the format where the condition is listed followed by a response from the Applicant. A copy of the original approval shall also be submitted with this report. A current copy of the certificate of insurance shall also be included with the compliance report. Evidence of compliance with other conditions shall also be included with the compliance report where applicable.

5. That the Applicant shall develop the property in substantial compliance with the representations made to the Commission in obtaining the SUP. Failure to so develop the property may result in the revocation of the permit.

6. That full compliance with all applicable governmental requirements shall be rendered in a timely mode.

7. That all parking shall be on-site; no street parking allowed.

8. That a parking plan shall be submitted, if applicable, for approval by the Department's Zoning Administration and Enforcement Division upon the approval of the SUP.

9. That hours of operation shall be limited to 8:00 a.m. to 5:00 p.m. Monday through Friday.

10. That BMPs shall be implemented to ensure water quality and marine resources are protected. All construction-related materials shall be free of pollutants and placed or stored in ways to avoid or minimize disturbance. No debris, petroleum products or deleterious materials, or wastes shall be allowed to fall, flow, leach, or otherwise enter near shore waters. Any turbidity and siltation generated from activities proposed at the site shall be minimized and contained in the immediate vicinity of construction through the use of effective silt containment devices. Construction during adverse weather conditions shall be curtailed to minimize the potential for adverse water quality impacts. Appropriate measures to minimize dirt and water runoff, noise, and dust must be used.

11. That noise mitigation measures, such as limiting rock crushing to 30 days per calendar year shall be used during the duration of the project.

12. That a Noise Permit be obtained from the Department of Health, as applicable.

In consideration of the foregoing, the Planning Department recommends that the Maui Planning Commission adopt the Planning Department's Report and Recommendation prepared for the August 8, 2023 meeting as its Findings of Fact, Conclusions of Law, Decision and Order and authorize the Director of Planning to transmit said Decision and Order on behalf of the Planning Commission.

APPROVED:

Kathleen Ross Aoki

KATHLEEN ROSS AOKI
Planning Director

DATE: 12/17/2020

LEGEND

TMK (2) 4-7-014:010
Tax Map Key Parcel
Roads

Regional Location
ROCK CRUSHING SITE
MAKILA RANCHES II LOT 10

Goodfellow Bros. LLC — Island of Maui

North — Linear Scale (feet) 0 2,000 4,000

GOODFELLOW BROS.

Source: ESRI Online Basemap, County of Maui, 2020.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis

EXHIBIT i

DATE: 12/17/2020

LEGEND

- Work Area
- TMK (2) 4-7-014:010
- Tax Map Key Parcel
- Roads

Source: County of Maui, 2020. ESRI Online Basemap. Site plan prepared by Goodfellow Bros. LLC, 2019.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analyses.

Site Plan
ROCK CRUSHING SITE
MAKILA RANCHES II LOT 10

Pacific Rim Land Inc. — Island of Maui

North — Linear Scale (feet) 0 150 300

PACIFIC RIM LAND INC.
ESTABLISHED 1988

EXHIBIT 2

1. The entrance to the property looking mauka from Waianukole Street.

2. Looking makai toward the proposed work area.

3. Looking makai along the north boundary (fence) of the property.

Key Map

Site Photos

ROCK CRUSHING SITE
MAKILA RANCHES II
LOT 10

Goodfellow Bros. LLC — Island of Maui

North

GOODFELLOW BROS.

EXHIBIT 3

DATE: 12/17/2020

LEGEND

- TMK (2) 4-7-014:010 — Tax Map Key Parcel
- 3.2 ft Passive Flooding
- 3.2 ft Annual High Wave Flooding
- 3.2 ft Coastal Erosion
- 3.2 ft Exposure Area

Source: ESRI Online Basemap. County of Maui, 2020. PacIOOS, 2017.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis

Figure 12: Sea Level Rise Exposure Area
ROCK CRUSHING SITE
MAKILA RANCHES II
LOT 10

Goodfellow Bros. LLC — Island of Maui

North — Linear Scale (feet) 0 350 700

GOODFELLOW BROS.

EXHIBIT 4

From: Shayne Agawa
To: Paul Fasi
CC: Eric Nakagawa; Nadine Orikasa; Rachel Adams
Date: 3/18/2021 9:47 AM
Subject: Re: Fwd: SUP2\2021\0001_MakilaRanchesII\Agency Transmittal.pdf

Good Morning Paul,

The following are comments from our WWRD regarding the subject matter:

1. *This site is outside of our Lahaina Sewer Service Area. It is approximately 1 mile from our nearest sewer collection system in Puamana.*
2. *The site is approximately 7 miles from the Lahaina Wastewater Treatment Facility and our fill station for R-1 water.*
3. *R-1 water is available at the plant for hauling to the site by the applicant/operator if required. A temporary R-1 use permit would be necessary prior to obtaining water. An application can be found at https://www.mauicounty.gov/1318/Wastewater-Permits-Applications and questions can be addressed to Albert Hahn, Recycled Water Coordinator (808-270-7421 , albert.hahn@co.maui.hi.us)*

I will forward any comments to you from our SWD if any are received.

Feel free to contact me if you have any questions.

Thank you,
Shayne

Shayne R. Agawa, P.E.
Deputy Director

County of Maui
Department of Environmental Management
2050 Main Street, Suite 2B
Wailuku, HI 96793
Phone: (808)270-8230
Fax: (808)270-8234

>>> Environmental Mgmt 3/16/2021 6:16 AM >>>

>>> Rachel Adams 03/11/21 1:56 PM >>>
Please see attached.

Thanks,
Rachel

EXHIBIT 5

PACIFIC RIM LAND INC.

ESTABLISHED 1988

June 19, 2023

Shayne Agawa, P.E., Director
County of Maui
Department of Environmental Management
200 S. High Street
Wailuku, HI 96793

Subject: Rock Crushing Site Makila Ranches II Lot 10, TMK No. (2) 4-7-014:010 (SUP2 2021/0001)

Dear Mr. Agawa,

On behalf of Goodfellow Bros. LLC, thank you for your email of March 18, 2021 to the Department of Planning providing comments from the Wastewater Reclamation Division (WWRD) on the State Land Use Commission Special Permit Application for the Rock Crushing Site Makila Ranches II Lot 10.

We acknowledge your comments regarding the Lahaina Sewer Service Area and the Lahaina Wastewater Treatment Facility. The Rock Crushing Site will not need sewer services.

The property's non-potable water service is provided via a 1-inch meter by Launiupoko Irrigation Company. Should there be a need for R-1 water at the site, Goodfellow Bros. LLC will apply for a temporary R-1 use permit.

Thank you again for your comments. Please feel free to contact me at erinm@pacificrimland.com or (808) 270-5940 if you have any questions.

Sincerely,

Erin Mukai
Project Coordinator

cc: Tara Furukawa, Department of Planning

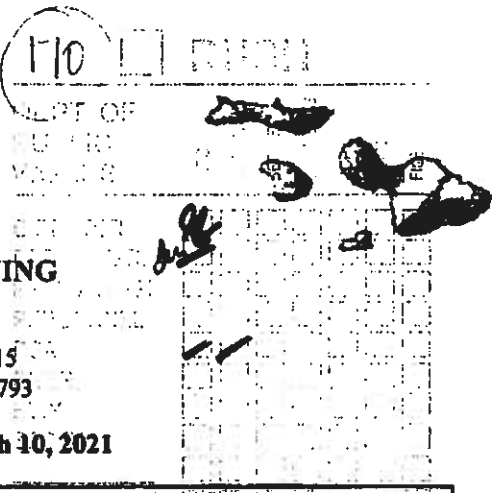
EXHIBIT 6

RECEIVED
DEPT OF PUBLIC WORKS
MAR 11 2021

MICHAEL P. VICTORINO
Mayor

MICHELE CHOUTEAU MCLEAN, AICP DIRECTOR'S OFFICE
Director

JORDAN E. HART
Deputy Director



DEPARTMENT OF PLANNING
COUNTY OF MAUI
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAII 96793

TRANSMITTAL **March 10, 2021**

	STATE AGENCIES
x	Dept of Health, Maui (2)
x	DLNR-Land, Maui
x	DLNR-SHPD Submitted via HICRIS
x	Land Use Commission

	COUNTY AGENCIES
x	Dept of Environmental Management (K: Drive Filepath)
x	Dept Public Works (K: Drive Filepath)

Filepath for County Agencies: K:\WP_DOCS\PLANNING\SUP2\2021\0001_MakilaRanchesII

PROJECT NAME:	**Makila Ranches II Lot 10**
APPLICANT:	**Goodfellow Bros. LLC**
PROJECT ADDRESS:	**Waianukole St., Lot 10, Launiupoko, Maui**
PROJECT DESCRIPTION:	**Requesting 15 yr. State special permit for rock crushing facility – 12.8 acres**
TMK:	**(2) 4-7-014:010**
PERMIT ID:	**SUP2 2021/0001**

TRANSMITTED TO YOU ARE THE FOLLOWING:

X	Application(s)

Transmitted for your review and comment is a copy of the above referenced request. Please submit comments to me within 3 weeks of this date via email or hardcopy. If no response is received within this timeframe, the Department will assume your agency has "no comment." If you have any questions, please contact me at paul.fasi@mauicounty.gov or at (808) 270-7814.

Mahalo,

Paul Fasi, Sr. Staff Planner

( ) We have no objections.
(x) We have no comments.
( ) Comments are attached.

Signed: _____

Print: Rowena M. Dagdag-Andaya

Email: rowena.dagdag-andaya@co.maui.hi.us

Date: 5/21/21

xc: Clayton I Yoshida, AICP, Planning Program Administrator
Paul F. Fasi, Staff Planner
Project File

PFF:lp
K:\WP_DOCS\PLANNING\SUP2\2021\0001_MakilaRanchesII\Agency Transmittal.doc

EXHIBIT 7

21/1414

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
Maui District Health Office
54 South High St. Rm. #301
Wailuku, HI 96793

COUNTY OF MAUI
DEPT OF PLANNING
CURRENT DIV RECEIVED
'21 APR -1 P4:25

Lorrin W. Pang, M.D., M.P.H.
District Health Officer

March 30, 2021

Ms. Michele Chouteau McLean, AICP
Director
Department of Planning
County of Maui
2200 Main Street, Suite 315
Wailuku, HI 96793

Attn: Paul Fasi, Sr.

Dear Ms. Chouteau McLean:

Subject:	**MAKILA RANCHES II LOT 10**
Applicant:	**Goodfellow Bros. LLC**
Permit No.:	**SUP2 2021/0001**
TMK:	**(2) 4-7-014:010**
Location:	**Waianukole Street, Lot 10, Launiupoko, Maui**
Description:	**Requesting 15-year State special permit for rock crushing facility-12.8 acres**

Thank you for the opportunity to review this project. We have the following comments to offer:

> The proposed project must comply with the requirements of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems, if applicable. If you have any questions regarding the above comments, please contact Roland Tejano, Environmental Engineer, at 808 984-8232.

It is strongly recommended that you review the department's website at https://health.hawaii.gov/epo/landuse/ and contact the appropriate program that concerns your project.

Should you have any questions, please contact me at 808 984-8230 or email me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

Patti Kitkowski
District Environmental Health Program Chief

c Joanna L. Seto, P.E.

EXHIBIT 8

PACIFIC RIM LAND INC.

ESTABLISHED 1988

June 19, 2023

Patti Kitkowski, District Environmental Health Program Chief
State of Hawaii
Department of Health
54 South High Street, Room #301
Wailuku, HI 96793

Subject: Rock Crushing Site Makila Ranches II Lot 10, TMK No. (2) 4-7-014:010
(SUP2 2021/0001)

Dear Ms. Kitkowski,

On behalf of Goodfellow Bros. LLC, thank you for your letter of March 30, 2021 to the Department of Planning providing comments on the State Land Use Commission Special Permit Application for the Rock Crushing Site Makila Ranches II Lot 10.

We acknowledge your comments regarding compliance with the requirements of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems.

Thank you again for your comments. Please feel free to contact me at erinm@pacificrimland.com or (808) 270-5940 if you have any questions.

Sincerely,

Erin Mukai
Project Coordinator

cc: Tara Furukawa, Department of Planning

EXHIBIT 9

SCS Project Number 652-2

AN ARCHAEOLOGICAL INVENTORY SURVEY OF 633 ACRES IN THE LAUNIUPOKO (LARGE LOT) SUBDIVISION NOS 3, 4, and 7 LAUNIUPOKO AND POLANUI AHUPUA`A DISTRICT OF LAHAINA (FORMERLY KĀ`ANAPALI) ISLAND OF MAUI, HAWAI`I [TMK (2) 4-7-01:2 por.]

Prepared by:
C. Kanani Paraso, M.A.
and
Michael Dega, Ph.D.

Revised August 2006

Prepared for:
West Maui Land Company, Inc.
33 Lono Avenue, Suite 450
Kahului, Maui, HI 96732

SCIENTIFIC CONSULTANT SERVICES Inc

711 Kapiolani Blvd. Suite 975 Honolulu, Hawai`i 96813

EXHIBIT 10

ABSTRACT

Scientific Consultant Services (SCS), Inc. conducted Archaeological Inventory Survey on 633 acres of undeveloped land known as Launiupoko (Large Lot) Subdivision No. 3, 4, & 7, located in Launiupoko and Polanui Ahupua`a, Lahaina District (formerly Kā`anapali District), Maui Island, Hawai`i [TMK (2) 4-7-01:2 por.]. The project involved full systematic survey of the entire parcel, mapping and recording of identified sites and features, and limited testing.

A total of ten sites were identified, the majority of which are historic in age. Five of the ten sites are associated with the sugarcane plantation era. These sites include large rock mounds, terraces, and irrigation ditches. One of the irrigation ditches was previously recorded by PHRI (2000) as State Site Number 50-50-03-4787 Feature D and is referred to as Lahaina Pump Ditch No. 1. Site 50-50-03-5950 is composed of 17 linear, large rock mounds scattered throughout the project area. Site 50-50-03-5951 consists of an irrigation ditch, water pipes, reservoir, and flume. Site 50-50-03-5952 is a terrace complex associated with the manual cultivation of sugarcane. Site 50-50-03-5957 is also a terrace associated with sugarcane cultivation. Two of the ten sites are rock walls associated with the cattle ranching era, one of which was previously recorded by Graves *et al.* (1998) and Haun *et al.* (2001) as State Site Number 50-50-03-2665. The other rock wall is designated Site 50-50-03-5954. One of the ten sites (Site 50-50-03-5953) is a scatter of slag fragments and cores interpreted to be a historic work area. As slag is a mill by-product, the slag scatter is historic in age. The function and age of Sites 50-50-03-5955 and 50-50-03-5956 are indeterminate but are simply referred to as activity areas. Site 50-50-03-5955 is a modestly modified rock deposit/bedrock area containing a small cache of coral fragments. This is site is simply interpreted as a modified area as disturbance, erosion, and lack of cohesiveness renders interpretations difficult. Site 50-50-03-5956 is a midden and lithic scatter that also contains historic material such as glass and metal fragments. Material was sampled during surface collection. No cultural materials were observed during subsurface testing.

All of the sites identified during Inventory Survey are significant under Criterion D. All the sites have been thoroughly mapped and recorded. No further work is recommended for these sites. SIHP 50-50-03-5950, the large plantation era clearing mounds, have been discussed within the community from a cultural perspective. Oral documentation by former plantation employees suggests that the mounds may have been constructed upon existing stone structures, and cultural materials were periodically placed within the mounds during field clearing (Kirkendall 2006). If development of the area requires any deconstruction of these mounds, Site 5950, a qualified archaeologist should monitor these activities. In general the project area has been tremendously altered by sugarcane cultivation and subsurface testing yielded negative results, the presence of intact subsurface cultural deposits is very low. Other then Archaeological Monitoring at Site 50-50-03-5950 No further work is recommended in the project area.

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INTRODUCTION

At the request of West Maui Land Company, Inc., Scientific Consultant Services (SCS), Inc. conducted Archaeological Inventory Survey on 633 acres of undeveloped land known as Launiupoko (Large Lot) Subdivision No. 3, 4, & 7, located in Launiupoko and Polanui Ahupua`a, Lahaina District (formerly Kā`anapali District), Maui Island, Hawai`i [TMK (2) 4-7-01:2 por.] (Figures 1 and 2). The project area includes Large Lots 3 (214 acres), 4 (271 acres), and 7 (148 acres). The lands are currently owned by Makila Land Company, LLC. The majority of the project area was used for sugarcane cultivation and subsequently for cattle ranching; a portion of the project area (Lot 4) is still used for ranching.

This Inventory Survey included historic background research and settlement pattern analysis prior to fieldwork, systematic pedestrian survey of the entire project area, mapping and recording of identified features, and representative manual and mechanical testing of sites. Mechanical testing through trenching was also conducted in areas without surface sites to assess the presence/absence of subsurface cultural deposits in representative portions of the project area. Fieldwork was conducted between January 23, 2006 and February 28, 2006 by SCS employees Tomasi Patolo, B.A. (Field Director), Jennifer Frey, B.A., Eric Pope, B.A, and Donna Shefcheck, B.A. The Principle Investigator for this project is Michael Dega, Ph.D.

Archaeological Inventory Survey of the project area was conducted to determine the presence/absence of archaeological sites and features in surface and subsurface contexts through complete systematic pedestrian survey and representative subsurface testing. The ultimate goals were to identify archaeological sites, adequately record and document all of the sites present, determine the significance of the sites, and to provide recommendations to the State Historic Preservation Division (SHPD) regarding site significance and mitigation in regards to future land use in the project area.

ENVIRONMENTAL SETTING

LOCATION

The project area consists of 633 acres of "undeveloped" land located on the western slopes of the West Maui range situated between coastal areas to the west and mountainous terrain to the east. The land is "undeveloped" per current housing but has been formerly developed through sugar cane cultivation (see below). The majority of the project area falls within the bounds of Launiupoko Ahupua`a. The northern portion of the project area extends into the southern half of Polanui Ahupua`a. Elevation of the project area ranges from sea level to

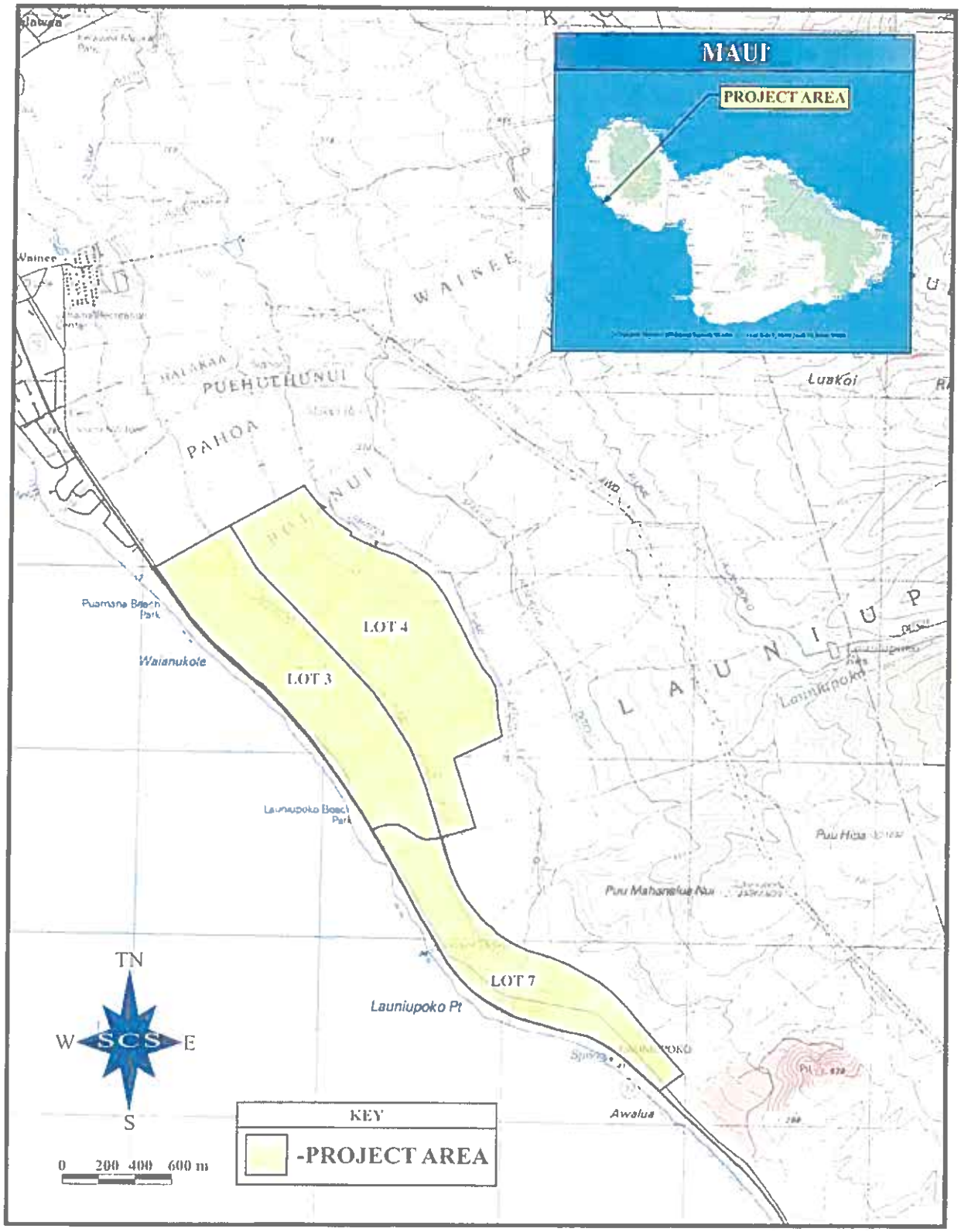

Figure 1: USGS Lahaina Quadrangle Map Showing Project Area.

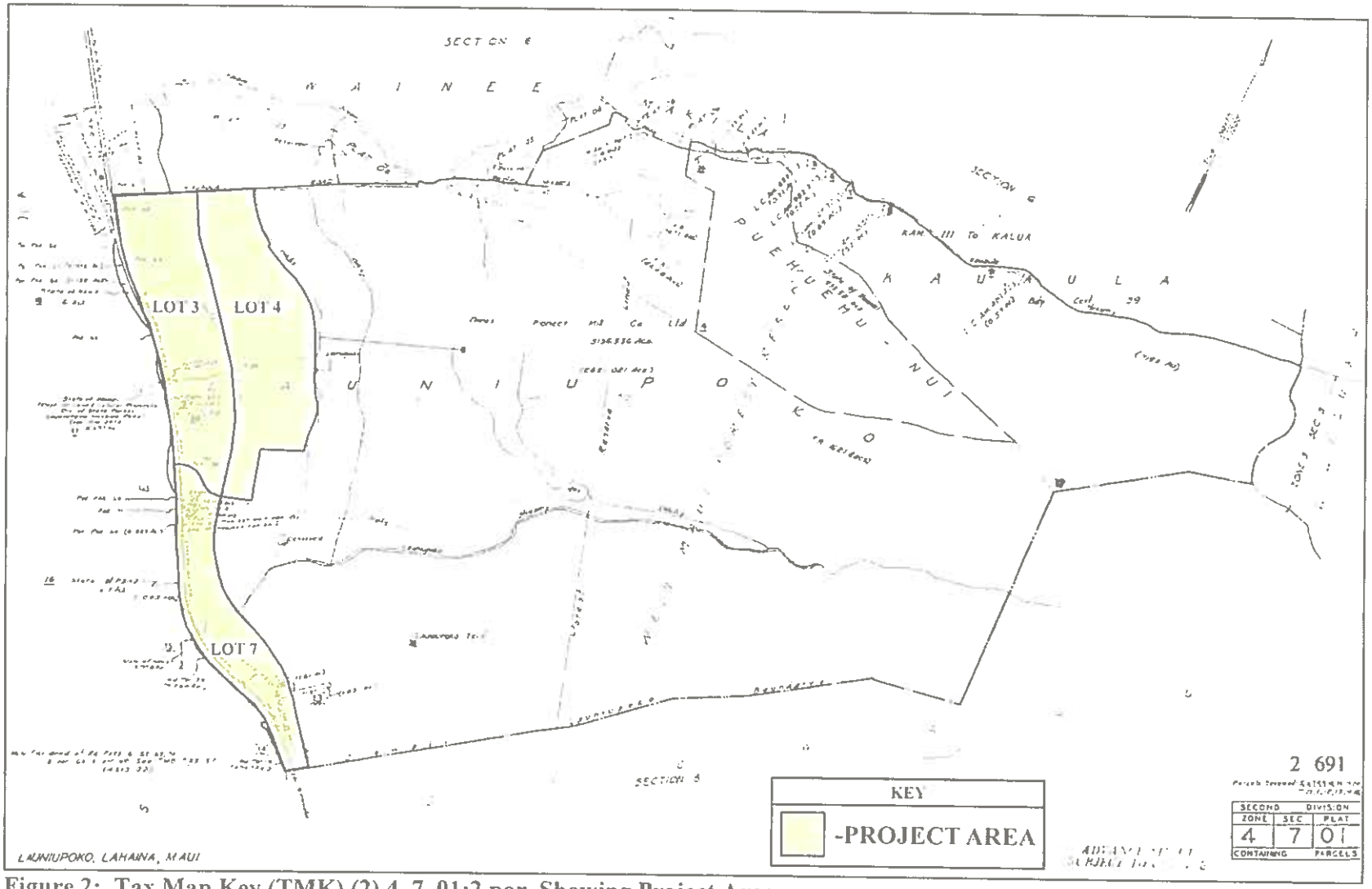

Figure 2: Tax Map Key (TMK) (2) 4–7–01:2 por. Showing Project Area.

approximately 250 feet above mean sea level (amsl). The project area is bound on the west by Honoapi`ilani Highway and on the north by Kaua`ula Road. Hāniu Street forms the eastern boundary in the northern half of the project area. The southern half of the project area narrows, crosses Kai Hele Ku Street, and extends to the Launiupoko and Olowalu Ahupua`a boundary.

LANDFORM AND SOILS

According to Foote *et al.* (1972), soils in the project area fall primarily into three sub-classifications of the Wainee soil series. The Wainee soil series consists of well-drained soils on alluvial fans, developed in alluvium derived from weathered basic igneous rock, and are gently to moderately sloping. These soils are used mostly for sugarcane. The Wainee Series derivatives are similar yet differ primarily by slope and stone content. Within the project area the WxB (Wainee very stony silty clay) soil is present near the coast. This soil is only mildly sloping (3–7%) with slow runoff and a slight erosion hazard. Stones cover as much as 3 percent of the surface. The WyC soil (Wainee extremely stony silty clay) is found inland of the WxB soil and along the coast in the southern portion of the project area. The WyC soil is moderately sloping (7–15%), has moderately rapid permeability, slow to medium runoff, and a slight to moderate erosion hazard. Stones cover 3 to 15 percent of the surface. The WyB soil (Wainee extremely stony silty clay) is found inland within the WyC soil. The WyB soil is only mildly sloping (3–7%), has slow runoff, and a slight erosion hazard. Stony alluvial land (rSM) is found at the very southern portion of the project area, immediately northwest of Launiupoko Gulch. This land type consists of stones, boulders, and soil deposited by streams along the bottoms of gulches and on alluvial fans. In most places the slope is 3 to 15 percent.

VEGETATION

The vegetation in the project area includes both indigenous and introduced species. Vegetation consists mainly of shrubs and grasses that occur rather densely in some areas. Shrubs include lantana (*Lantana camara*) and *`ilima* (*Sida fallax*). Trees such as *kiawe* (*Prosopis pallida*), java plum (*Syzygium cumini*), and *`opiuma* (*Pithecellobium dulce*) are present. *Koa haole* (*Leucaena leucocephala*) are also present as shrubs and small trees.

CLIMATE

Rainfall in this environmental zone is very low. The project area receives an average annual rainfall of only 10 to 15 inches with most of it occurring during the winter months (November through April) (Foote *et al.* 1972). Seasonal variation in rainfall amount follows normal orographic patterns for leeward-type areas of Maui (Armstrong 1983).

TRADITIONAL AND HISTORIC SETTING

Archaeological settlement pattern data indicates that initial colonization and occupation of the Hawaiian Islands first occurred on the windward shoreline areas of the main islands between the A.D. 4th and 11th centuries, with populations eventually settling in drier leeward areas during later periods (Kirch 1985). Although coastal settlement was dominant native Hawaiians began cultivating and living in the upland *kula* zones. Greater population expansion to inland areas began between A.D. 11th and 12th centuries and continued through the 16th century. Large scale or intensive agriculture was implemented in association with habitation, religious, and ceremonial activities. Coastal lands were used primarily for settlement while staple crops (i.e. *kalo*/taro) were cultivated in near-coastal reaches, as well as, in watered regions along the plain and in the uplands.

The District of Lahaina, located on the western side of the West Maui Mountains (Mauna Kahalawai), extends from Honokohau Ahupua`a on the north to Ukumehame Ahupua`a on the south. A number of traditional activities took place in this district from fishing and cultivation by early Hawaiians to residential occupation and recreational use by members of the *ali`i* (ruling) class. The district served as an important center both politically and socially during the late prehistoric and early historic period. It was the royal chiefly center for centuries (Thrum 1974; Walker 1981; Kirch 1985; Kamakau 1992; Sterling 1998) and played a key role in the intra-island warfare associated with island unification. By the late 1700s, Kamehameha I had firmly established his presence on Maui with the invasion of Lahaina. By the early 1800s, Kamehameha I designated Lahaina the capital of the Hawaiian Kingdom. Lahaina served as the capital until 1850 when it was moved to Honolulu. In 1819, the first whaling ship Bellina arrived in what would later be known as Lahaina Harbor. Lahaina served as the center of commercial whaling in the Pacific until the mid-1800s. After the decline of the whaling industry, Lahaina and surrounding areas became a base for sugarcane plantations. Most recently tourism is the main industry in Lahaina.

TRADITIONAL SETTING OF LAHAINA

Lāhainā is the traditional spelling and pronunciation of what we presently call Lahaina. Lāhainā literally translated means "cruel sun," said to be named for a time of terrible droughts (Pukui *et al.* 1974:127). Others believe the original name for Lahaina was Lele which is usually the flying piece of a *kuleana* (small piece of property) near the shore (Sterling 1998:17). As Lahaina is situated along the shoreline the name is applicable. Pukui *et al.* (1974:127) also note

that Lahaina is associated with the Kaua`ula wind that caused the destruction of churches and buildings in Lahaina in 1828 and again in 1858.

Lahaina is traditionally and historically known for its verdant and abundant groves of breadfruit. Sterling's (1998) *Sites of Maui* references Lahaina as second only to Puna, Hawai`i as a favorable location for breadfruit cultivation. In *mele* (songs) Lahaina is even referred to as *ka malu ulu o Lele*, "the breadfruit shade of Lele" (Handy 1940:190). Ashdown (1970) writes that the name Lele was changed to Laha`ina when it became the home of the noted prophet, Laha`inaloa for whom all of West Maui was named.

According to Handy and Handy (1972:492), the District of Lahaina was a favored place among the high chiefs of Maui and their entourage because of its abundant resources from both land and sea, its warm climate, easy communication with other populated areas around West Maui, and close proximity to the outer islands of Moloka`i and Lāna`i.

Early descriptions of Lahaina village provided by Westerners paint a picture of idyllic tranquility and cooperation among the inhabitants. Menzies, the surgeon and naturalist on board the HMS Discovery during Captain George Vancouver's expedition, states that he and the members of his party "...observed the rugged banks of a large rivulet that came out of a chasm cultivated and watered with great neatness and industry" (Handy and Handy 1972:493). Menzies goes on to describe an afternoon tour of the village on March 17, 1793, as follows:

> I accompanied Vancouver and a party of officers, with the two Niihau women, to see the village of Lahaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regular manner with the different esculent roots and useful vegetable of the country, and watered at pleasure by aqueducts that ran here and there along the banks of intersecting fields...In short , the whole plantation was cultivated with such studious care and artful industry as to occupy our minds and attention with a constant gaze of admiration... [Handy and Handy 1972:493].

Little had changed twenty-six years later when J. Arago visited Hawai`i with Captain Louis de Freycinet in 1819. Arago, impressed by the verdant quality of Lahaina and the skill the Hawaiians exhibited in farming, writes:

> The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to a greater advantage; little pathways

> sufficiently raised and kept in excellent condition…These are frequently divided by trenches, through which a fresh and limpid stream flows tranquilly, giving life to the plantations…[Handy and Handy 1972:493].

In *The Hawaiian Planter*, Handy (1940:159) discusses the proliferation of fishing settlements and isolated fishermen's houses all the way from Kihei to Honokahua and mentions the cultivation of *`uala* (*Ipomea batatas*, sweet potato) in the red *lepo* (sandy soil) near the shore. Handy (1940) points out that this coast is the most favorable on Maui for fishing and that *kula* lands (uplands) were ideal for the cultivation of sweet potato. According to Handy (1940:106), the *ali`i* Kaka`alaneo lived on Keka`a Hill in Lahaina District. Keka`a became the capital of Maui during Kaka`alaneo's reign and was also an area of intense cultivation. Fornander (1918–19, Vol. 5:540–41) discusses how Kaka`alaneo planted *kukui* (*Aleurites moluccana*, candlenut) and *`ulu* (*Artocarpus incisus*, breadfruit) at Lahaina village.

According to Thrum (1974), in *Hawaiian Annual*, an infamous chief named Hua, who was born in Lahaina and reigned prior to the 10th century, is credited with the construction of the first *heiau* (temple) on Maui. Hua is also referred to as Hua-a-Pohukaina and Hua-a-Kapuaimanaku, names by which his father was also known. Hua is known for the construction of two *heiau* in Lahaina. Another Hua, two generations later, is credited with the construction of a third. Three additional *heiau* are said to date to or just prior to the reign of Kahekili (Thrum 1974).

Lahaina was known as a *pu`uhonua* or place of refuge in Maui. The *pu`uhonua* at Lahaina was associated with Ka`ahumanu who inherited her lands from her husband Kamehameha. In *Ruling Chiefs of Hawai`i*, Kamakau (1992:312) discusses how Ka`ahumanu's lands of Waipukua in Waihe`e, Kalua`aha in Moloka`i, and Pu`umau in Lahaina were deemed places where people could be saved from death.

Fornander (1969) discusses how Lahaina figured prominently in battles between various island chiefs. In the early 1700s, wars between Alapa`inui of Hawai`i, in conjunction with Kamehamehanui of Maui, and Kauhi (Kamehamehanui's brother) occurred. Alapa`inui established his headquarters at Lahaina village while the rest of his army occupied the coast extending from Honokowai to Ukumehame. With the pending arrival of Peleioholani from O`ahu, who was to assist Kauhi, Alapa`inui destroyed the *kalo* patches and broke down *`auwai* belonging to the followers of Kauhi in the vicinity of Lahaina. Eventually the forces met, Fornander writes:

> ...The fortune of the battle swayed back and forth from Honokowai to near Lahaina; and to this day heaps of human bones and skulls, half buried in various places in the sand, attest to the bitterness of the strife and carnage committed [Fornander 1969, Vol. 2:140].

Lahaina also played a crucial role in the intra-island warfare that led to island unification and the establishment of the capital of the Hawaiian Kingdom by Kamehameha I. In February of 1795, Kamehameha established his presence on Maui with the invasion of Lahaina. Kamehameha's great fleet of war canoes landed in Lahaina covering the coast from Launiupoko to Mala (Kamakau 1992). That part of Lahaina, covered in food patches and cane fields, was overrun by Kamehameha's men from the island of Hawai`i (Kamakau 1992:171). By 1802, Kamehameha I constructed the brick palace, Moku`ula, in Lahaina, from which the collection of taxes was administered. Lahaina served as the capital of the Hawaiian Kingdom from that time until 1850 when Kamehameha moved it to Honolulu.

TRADITIONAL SETTING OF THE PROJECT AREA

The project area is situated in the *ahupua`a* of Launiupoko, in the District of Lahaina, on the southwest side of West Maui. Launiupoko Ahupua`a is bordered from north to northeast by Polanui, Polaiki, and Pūehuehunui Ahupua`a on the north and Olowalu Ahupua`a on the south. Literally translated Launiupoko means "short coconut leaf" (Pukui *et al.* 1974:130). Launiupoko is known to be rocky and dry, as rainfall is scarce. In *The Hawaiian Planter*, Handy states that:

> Although there is a sizable stream bed and a deep valley here, there is no visible evidence of wet taro cultivation, and the Hawaiian planters at Olowalu say that *lo`i* never existed in Launiupoko. It is possible that there may have been a few terraces on the level land at the base of the valley, but this is wholly arid land now and covered with dense brush [Handy 1940:103].

According to Handy and Handy (1972:272), the Lahaina District is "flanked by excellent fishing grounds." Although there appears to be few legends pertaining to the Launiupoko area, a search of the literature reveals several references indicating the importance of fishing in Launiupoko Ahupua`a. In *Sites of Maui*, Sterling (1998:27) quotes A.D. Kahaulelio from an article titled "Fishing Lore," *Ka Nupepa Kuokoa*, May 30, 1902, as saying "[t]he schools of *nehu* [*Stolephorus Purpureus*, an important bait fish used to catch tuna] were accustomed to coming in to Launiupoko and Keonepoko in the District of Lahaina, and sometimes at Mala." Kahaulelio also wrote the following about shark fishing in the area:

> Hoomoemoe Fishing for Sharks—It was much practiced by old timers of this ahupua`a of Makila, and also by the people of the upland of Kauaula since we

> were children...The kinds of sharks caught by the hoomoemoe method were lalakea and hammerheads...the place where hoomoemoe fishing was done was at Pahee, in Launiupoko, Lahaina. When you arrive at the little cape of Keahuiki and down the small incline, the first stretch you come to extending over to the rocky beach and adjoining with the sand on the left side, that is the place where the nets were laid [Sterling 1998:27].

LAND TENURE

The land tenure system in prehistoric Hawai`i was rooted in a different epistemological framework than the subsequent colonially-imposed framework of private land ownership. The idea of holding land was not synonymous with owning it, but is described as closer to a trusteeship between the *ali`i nui* (ruling chiefs) of the island and the traditional Hawaiian *akua* (gods) Lono and Kāne (Handy and Handy 1972:41). Each island was divided into *moku* (districts) that were solely geographical subdivisions. The number of these *moku* depended upon the size of each island. *Moku* were partitioned into smaller landholding units known as *ahupua`a* that were governed by *ali`i* or designated *konohiki*. The *ahupua`a* varied in size but ideally encompassed land from the mountain to the sea, allowing the chiefs and *maka`āinana* (commoner) access to both land and marine resources. All persons from chiefs to commoners were entitled to portions of these resources (Chinen 1994).

The prehistoric period in the Hawaiian Islands came to an end with the arrival of Captain Cook to the island of Kaua`i in 1778. The years to follow would drastically alter the political, agricultural, and social foundation of the Hawaiian Kingdom. Destabilization of Hawaiian society was further intensified by the profound reformation of the traditional land system.

The 1848 Māhele introduced land privatization putting an end to the traditional Hawaiian land system. Under the Māhele both chiefs and commoners alike were required to obtain private land titles (Kame`eleihiwa 1992). Individuals holding land were required by new Western notions of law to submit their claims or forfeit their land. Hawaiians were permitted to claim lands on which they had lived and cared for, however, often times *maka`āinana* were ill informed of the procedures and failed to make claims, ultimately resulting in the loss of land that they had occupied for generations. Kirch discusses traditional Hawaiian land use strategies as revealed through Land Court Award testimonies and records and the effect the Māhele had on the fundamental structure of traditional Hawaiian culture:

> While LCA (Land Court Awards) establish historic land utilization in Hawai`i (during the *Māhele*), documented testimony from many land recipients have also demonstrated continuous generational occupation of the land. Settlement

> patterns illustrated in the LCA records highlight the multi-functional land use practices related to habitation and agriculture and perhaps the clear connection of these strategies. By mid-century, the fledgling [Hawaiian] Kingdom undertook the single most significant inducement to cultural change, the Great Māhele or division of lands between the king, chiefs, and government, establishing land ownership on a Western-style, fee-simple basis. From this single act, an entire restructuring of the ancient social, economic, and political order followed [Kirch 1985:309].

The Waihona 'Aina database (2000) compiles land ownership data from the Indices of Awards (Indices 1929), Native Register (NR n.d.), Native Testimony (NT n.d.), Foreign Register (FR n.d.), and Foreign Testimony (FT n.d.). The database lists only one claim for Launiupoko. The entire *ahupua'a* of Launiupoko consisting of 3,778 acres was awarded to Thomas Phillips (Royal Patent 1358 LCA 82); no *kuleana* lands were awarded within the *ahupua'a* (Figure 3). This LCA proved to be somewhat controversial as Kekauluohi (Kamehameha III) made a stipulation that "this land shall not be conveyed to a haole and one who does not reside in Hawai'i." Testimonies concerning the boundaries reference a rock called Kohe Kili Pōhaku, which is described as "a place of one of the kohe (female genitalia) dropping diversions used by Pele's sister as she was fleeing the unwanted advances of Kamapua'a (Orr in Graves *et al.* 1998: Appendix A). The testimony also references two graveyards, one in Launiupoko and one in Polanui. Additional testimony over the boundary of Phillips's claim mentions the same rock, it states, "I have always heard the old people say that the parting here between the two lands runs down to Keahoiki, which is a point near a large rock called Kohe Kili pohaku. It is a place where the old Gods stood" (Waihona 'Aina 2000). Orr's research of archival information from the Bureau of Conveyances document several mortgage transactions regarding the parcel. In 1853, Phillips mortgaged the property to Z. Kaauwai and then in 1856 to Antonio Sylvia (Graves *et al.* 1998: Appendix A). In 1857 it was mortgaged and paid off to James R. Dow. Orr (Graves *et al.* 1998: Appendix A) provides the last reference to the property, "4 pcs" in Launiupoko, from the Grantor Index 1845-1869, which shows Grantor C. Coady by Atty to Grantee Charles Lake in 1864, the year Phillips died. This same Grantor Index shows there was a record of a deed transaction between Grantor Benjamin Pittman by Atty to Grantee Campbell and Thurton concerning "various Pioneer Mill Plantation" lands in Lahaina (no date) (Graves *et al.* 1998: Appendix A). Additional Circuit Court documents concerning Phillips's landholding in Launiupoko were located by Orr at the Hawai'i State Archives. These documents describe how Phillips's Hawaiian wife and heir, Kahoomaeha, was denied rights to the property although she was named as heir in Phillips's two wills (Graves *et al.* 1998: Appendix A).

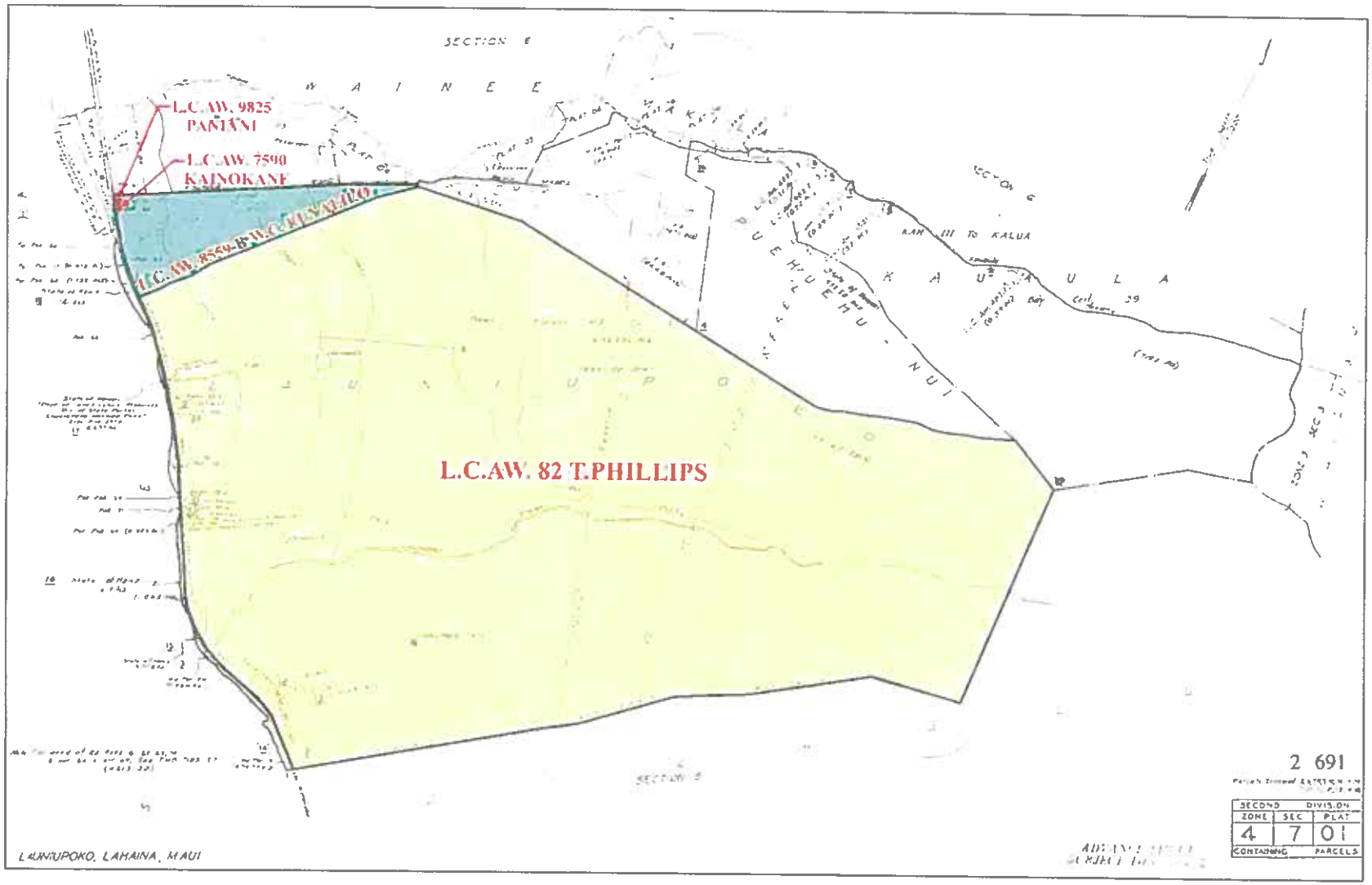

Figure 3: Tax Map Key [TMK] Showing Land Commission Awards in the Project Area.

The northern portion of the project area falls within Polanui Ahupua`a. With the exception of 66 acres of *kuleana* parcels, all 377 acres of Polanui Ahupua`a was awarded to William C. Lunalilo (Royal Patent 8395 LCA 8559-B, Apana 25) (see Figure 3). Among the *kuleana* parcels were 6.12 acres awarded to Kainokane (Royal Patent 1190, 1191 LCA 7590) and 2.7 acres awarded to Paniani (Royal Patent 1704 LCA 9825). Paniani's parcel which is in the very northwestern corner of the project area is documented as being a house lot. Kainokane's parcel, located directly south of Paniani's, is documented as having 37 *lo`i*, 5 coconut trees, and 3 *hala* (*Pandanus odoratissimus*) clumps.

HISTORIC SETTING IN THE PROJECT AREA

Land use in Launiupoko Ahupua`a in the mid 19th and early 20th century was largely devoted to the sugar industry. The Pioneer Mill Company was founded in 1860 by James Campbell, Henry Thurton, and James Dunbar. In 1864, Benjamin Pittman acquired lands in Launiupoko which he deeded to Campbell, Thurton, and Dunbar. In 1885, Thurton constructed a railroad system to transport sugarcane from the fields to the mill in Lahaina (Condé 1973). One railroad line crosses through the northeast portion of the project area and the other follows the coastline.

Between 1885 and 1895 the mill changed hands three times before finally falling under the control of Homer and Isenberg who incorporated the mill in 1895 (Goodwin and Leineweber 1997). Homer and Isenberg's agent was H. Hackfield Co. which later became Amfac, Inc.

In 1900, when the Pioneer Mill Company was reorganized, the plantation controlled a total of 12,500 acres. Although the land was believed to be "...the rockiest of the irrigated plantations in Hawaii..." the Pioneer Mill Company developed an extensive and powerful irrigation and water collection system, consisting of tunnels, ditches, and flumes that extended into the valleys of the West Maui Mountains, including Launiupoko (Graves *et al.* 1998). The terrains rockiness required that the land be cultivated by hand (Gilmore 1936). The cleared rocks were used to construct walls that formed banks of the cane row and the areas between the walls were softened and planted. The soil beneath the rocks was very fertile and produced good yields. However, by 1930, the fields at Launiupoko were no longer used for sugarcane cultivation due to labor shortages and the difficulty associated with working such rocky fields (Graves *et al.* 1998). Thereafter, the fields were used for cattle grazing by the Pioneer Mill Company. A 1939 Pioneer Mill Company map of Launiupoko (Figure 4) shows the old field designations, as well as, the ditches and reservoirs, including Lahaina Pump Ditch No. 1 which traverses the project area.

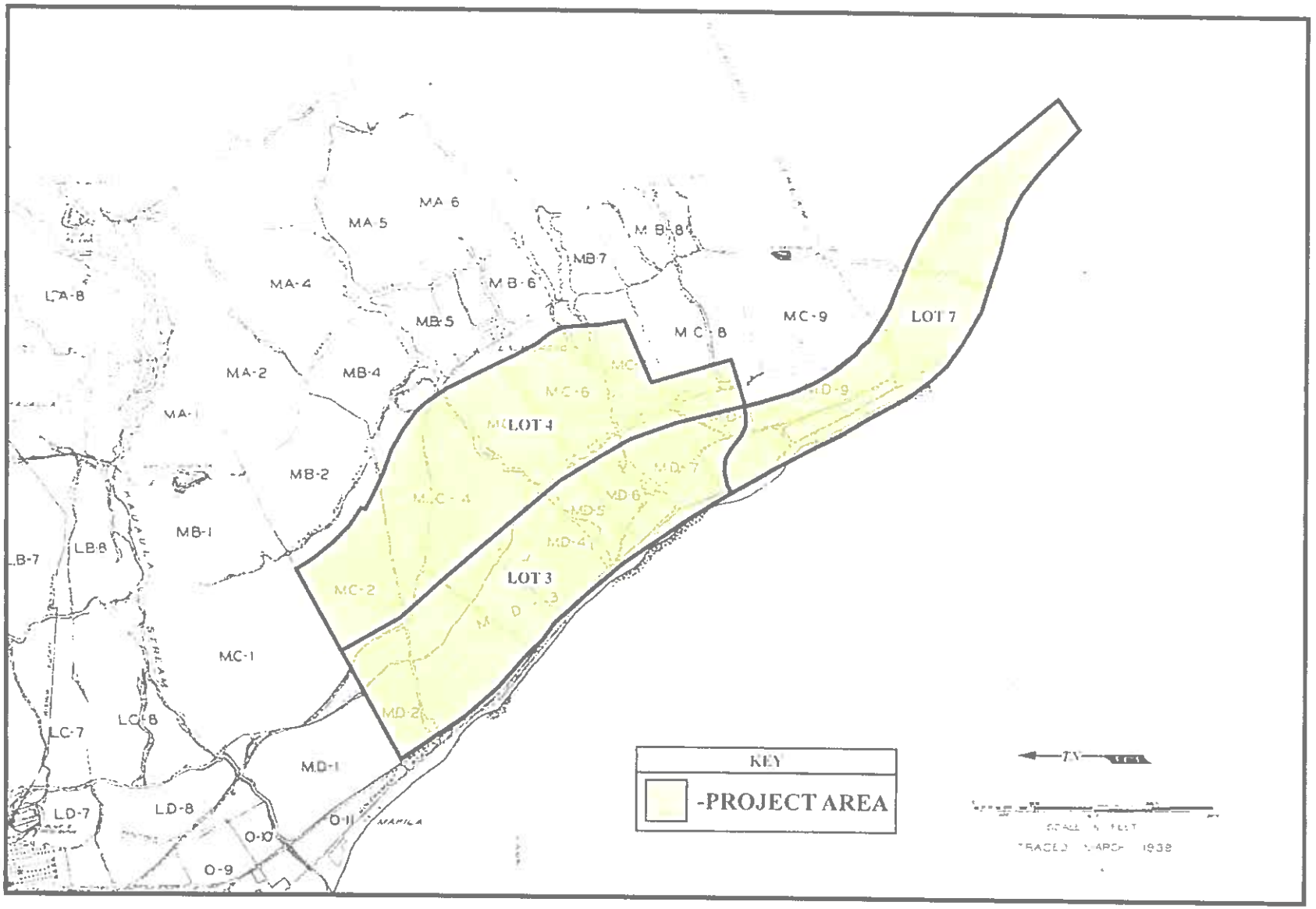

Figure 4: 1939 Pioneer Mill Company Map Showing Agricultural Fields and Irrigation Ditches.

Ranching activities which began in the 1930s continued until the mid-1970s. In a telephone interview, Herbert Kinores, former Pioneer Mill Company ranch foreman, tells Donna Graves (Graves *et al.* 1998) that a number of structures and features associated with ranching were constructed during this time. Walls and fences were built to enclose pastures. Small wooden corrals were built and used to capture free-roaming cattle. The cattle was then either herded or brought by truck to larger stone corrals. Cattle operations were halted in the mid-1970s due to an extended drought and falling market prices.

PREVIOUS ARCHAEOLOGY CONDUCTED IN THE LAUNIUPOKO AREA

A number of projects have been undertaken in the vicinity, however, only one has taken place within the project area. In 1991, as part of the Honoapi`ilani Highway Realignment Project, Paul H. Rosendahl, Ph.D., Inc. (PHRI) (Jensen 1991), surveyed a 7 mile long corridor part of which went through the current project area. No archaeological sites were recorded within the portion of the corridor that transected the project area.

Several projects have taken place in areas adjacent to the project area (Figure 5). In 1988, Chiniago, Inc. (Barrera 1988) conducted a reconnaissance survey of three alternate routes for Honoapi`ilani Highway. The routes extended from Honokowai to Lahaina. The southern portion of the surveyed corridors entered Polanui Ahupua`a and PHRI's 2000 project area (PHRI 2000). The corridors passed through a number of historic sites, including the Lahaina Historic District. An agricultural complex and a possible habitation terrace were also recorded, however, none of the sites fell within the bounds of the current project area.

In 1991, the Department of Land and Natural Resources State Historic Preservation Division (Donham 1991) surveyed a 1600 ft section of coastal zone between the shoreline and Honoapi`ilani Highway located immediately west of the current project area. No archaeological sites or features were observed.

In 1998, PHRI (Graves *et al.* 1998) conducted an inventory survey on 430 acres located *mauka* of the current project area within Launiupoko Ahupua`a. They recorded 47 sites consisting of 67+ component features. Sites associated with both permanent and temporary habitation were terraces, rock alignments, walls, enclosures, an L-shape, a C-shape, rockshelters, and a paved area. Sites associated with agricultural activities were terraces, clearing piles, agricultural plots, modified rock piles, canals, retaining walls, and a flume. Sites associated with

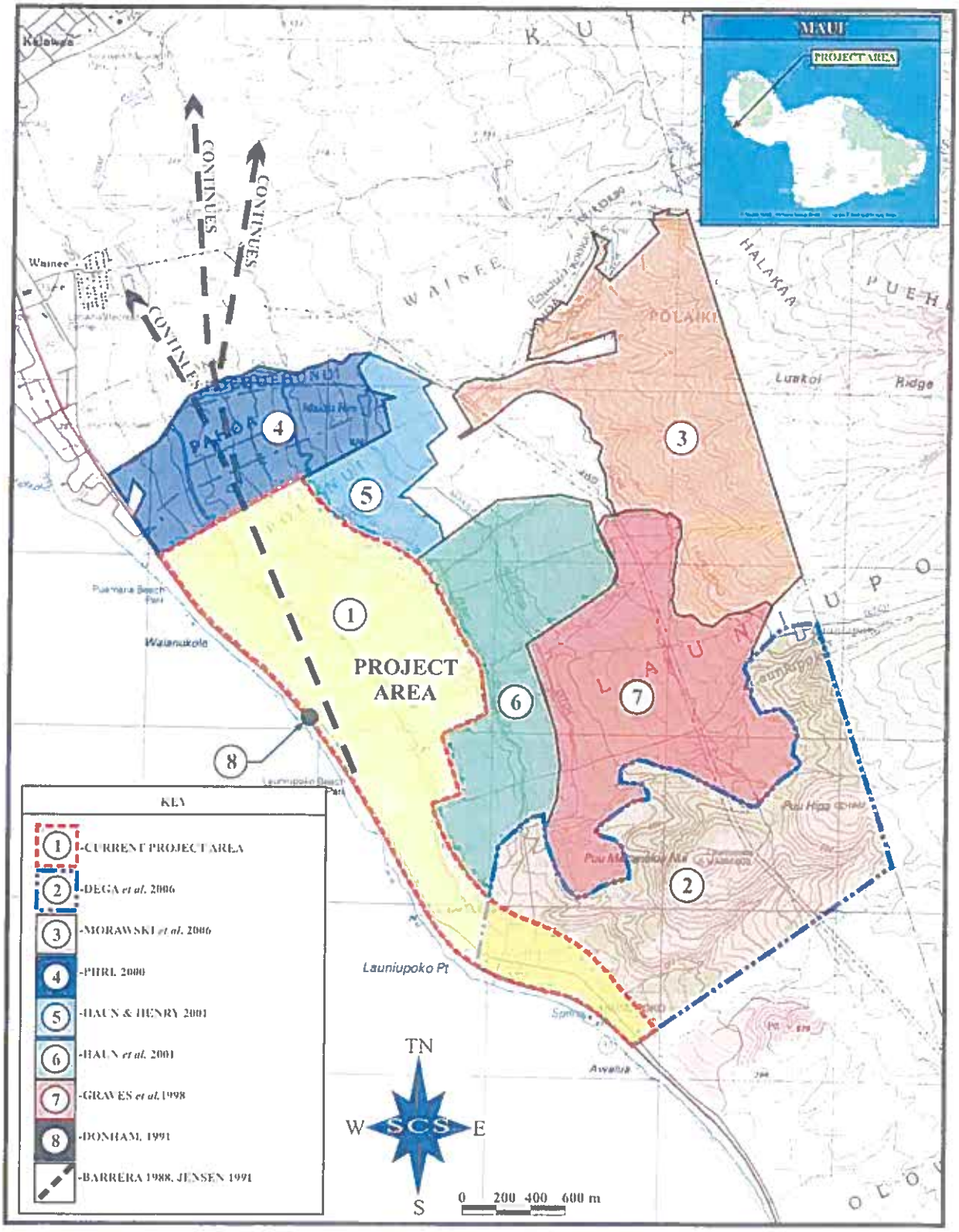

Figure 5: Previous Archaeological Work in the Vicinity of the Project Area.

animal husbandry were corrals and walls/fencelines. Additional sites recorded were cairns, uprights, one petroglyph panel, and a road.

In 2000, PHRI (2000) conducted an inventory survey on 230 acres located just north of the current project area in Polanui Ahupua`a. The entire parcel, except for three small areas, had been used for sugarcane cultivation. The area surveyed was 15 to 440 ft amsl, gently to moderately sloped, and rocky, very similar to the current project area. PHRI identified three sites (note that all site numbers are official Hawai`i state site number and are preceded by 50-50-03-): 1) two irrigated terraces (Site 4789) identified as *lo`i* situated adjacent to Kaua`ula Stream that are late prehistoric to pre-1900s in age; 2) nine historical features associated with the sugar mill operation scattered throughout the project area are collectively identified as Site 4787; and 3) a wall segment (Site 4795) along Kaua`ula Stream that probably formed part of a garden enclosure dating to the late prehistoric or early historic era. A total of 15 trenches were mechanically excavated but no cultural material was recorded.

In 2001, Haun and Associates (Haun and Henry 2001) conducted an inventory survey on 124 acres located northeast of the current project area in Launiupoko and Polanui Ahupua`a. They identified four sites consisting of six component features. One of the sites (Site 4787) was previously recorded by PHRI (2000). The remaining three sites are: 1) two linear rock piles (Site 5187); 2) a series of low terraces associated with a concrete and mortared stone ditch (Site 5188); and 3) a terrace interpreted as a *lo`i* based on appearance and proximity to Kaua`ula Stream. A test unit was excavated in the level soil surface of the terrace; no cultural material was observed.

In 2001, Haun and Associates (Haun *et al.* 2001) conducted an inventory survey on 300 acres located directly east and *mauka* of the current project area within Launiupoko Ahupua`a. They identified six sites consisting of seven component features. Two of the sites had been previously recorded by PHRI, a cattle wall (Site 2665) documented in Graves *et al.* (1998) and irrigation ditches associated with Site 4787 documented in PHRI (2000). Of the remaining four sites, two are cattle walls (Sites 5049 and 5050) from the ranching era, one is a historic roadbed (Site 5051) used to transport sugar, and the last consists of linear rock mounds or terraces (Site 5052) found along an unnamed drainage. The mounds/terraces are similar to those documented by PHRI (in Graves *et al.* 1998 and PHRI 2000) who report that these features are the result of manual sugarcane cultivation from the early 1900s, occurring in areas were mechanized cultivation was not possible.

SCS (Dega *et al.* 2006) conducted an inventory survey on 570.3 acres in Launiupoko Ahupua`a situated south and southeast of the current project area. They identified 50 sites comprised of 146+ features. Of these sites, four sites had been previously recorded by PHRI (Graves *et al.* 1998). These sites include Site 2665, Site 2674, Site 2675, and Site 2682, the latter in which two new features were documented. The sites identified generally relate to traditional pre-Contact Hawaiian settlement, sugarcane cultivation during the plantation era, and ranching. The traditional Hawaiian sites recorded are related to permanent and temporary habitation, ceremonial functions, work areas, tool manufacturing, and agriculture. Traditional pre-Contact site types identified on the parcel include: permanent habitation platforms, enclosures, paving, cupboards, and terraces; temporary habitation rockshelters and rock overhangs; a petroglyph panel; a burial; and agricultural features, including terrace complexes, modified outcrops, alignments, C-shaped enclosures, mounds, walls, and planting depressions within modified boulder fields. Sites associated with the plantation era include walls, terrace complexes with terrace alignments, pavings, borrow pits, a quarry pit, a water control gate, an incised boulder, and a road cut. Sites associated with the ranching era include walls, fences, a platform, a modified outcrop, feeding trough, metal water station for livestock, a corral, a dike, and an overhang. Sites of indeterminate age but likely related to the plantation era include terraces, retaining walls, alignments, mounds, a ditch, two markers, and a wall.

SCS (Morawski *et al.* 2006) conducted an inventory survey on 520 acres located northeast of the current project area within Launiupoko Ahupua`a. A total of thirty-five sites were identified, three of which were previously recorded by Cultural Surveys Hawai`i in Robins *et al.* (1994). The previously recorded sites are: 1) a boulder wall (Site 3173) interpreted as an irrigation ditch associated with the sugarcane plantation era; 2) a prehistoric agricultural complex (Site 3175) composed of mounds, retaining walls, and enclosures, including one C-shaped enclosure; and 3) a wall segment (Site 3176). The 32 newly recorded sites (Sites 5880 to 5911) span the pre-Contact through plantation eras. Traditional wetland taro cultivation features were recorded. Several large agricultural complexes, both traditional and post-Contact in nature, consisting of terraces, enclosures, and modified outcrops were identified within the project area.

PROJECT AREA EXPECTATIONS

A review of archival resources and the results of previous archaeological work conducted in the area was undertaken to assess the types of sites expected to be encountered during fieldwork. While Launiupoko may not have supported a sizable population during the pre-Contact period, archaeological work to the north, south, and east of the project area provides evidence of dryland and wetland agriculture and permanent and temporary habitation in the area.

These findings indicate occupation of the area began by the 11th century and continued through the plantation era. The coastal area of Launiupoko may have supported permanent habitation, ceremonial activities, fishing and other ocean activities, and work areas for tool manufacturing. However, the area has been heavily impacted by 70 years of sugarcane cultivation and subsequent cattle ranching activities. Therefore, it is highly probable that pre-Contact sites in the area are heavily disturbed and much of the remaining archaeological sites are associated with sugarcane cultivation or cattle ranching.

METHODOLOGY

FIELD METHODOLOGY

Multiple field tasks were completed during this Archaeological Inventory Survey, including pedestrian survey, site mapping and recording, and testing. Written and photographic documentation occurred during each phase of research. First, a full systematic pedestrian survey of the entire project area was conducted in order to identify any archaeological structures or surface scatters and to assess geographical and topographical features. When structures, artifacts, or unusual topographic changes were identified, they were plotted on an overall site map and flagged. Surface artifact assemblages, surface features, or anomalies were assigned temporary site numbers. Temporary site numbers were converted to State Site Numbers upon review by SHPD following completion of fieldwork.

After surveying was completed, the crew returned to each flagged location to map and record each site/feature and to assess excavation locations within sites. Limited hand-testing was conducted for sites that had the potential to be associated with the pre-Contact or early historic periods. Each unit was thoroughly documented and its location plotted on a project area map. Stratigraphic profiles were drawn and photographed. Artifacts were collected and catalogued on-site and shipped to the SCS laboratory for analysis. Charcoal samples were taken from individual features. Additionally, 10 trenches were mechanically excavated with a backhoe. Soil samples were taken from two of the backhoe trenches.

LABORATORY METHODOLOGY

All field notes, maps, photographs, and collected archaeological materials from this project are housed at the SCS laboratory in Honolulu. All artifacts and midden samples were sorted, weighed, identified, and catalogued on standard laboratory forms, then entered into a table produced in Microsoft Excel (Appendix A). Marine shell was identified to genus and to species when possible. The lithics were analyzed by Dr. Robert L. Spear of SCS. Dr. John Sinton from the Department of Geology and Geophysics at The University of Hawai'i at Mānoa

identified sampled material as slag from the mill. Site location maps, plan view sketches, and stratigraphic profiles were digitally drafted at the SCS laboratory.

ARCHAEOLOGICAL INVENTORY SURVEY RESULTS

A total of ten sites, two of which were previously recorded, were identified during Inventory Survey (Figure 6)(Table 1). Several of the sites contain multiple component features.

Table 1: Sites Identified During Project 652 Inventory Survey in the Launiupoko Large Lot Subdivision No. 2 Lots 3, 4, 7 [TMK (2)4-7-01:2 por.]

State # 50-50-03-	Temp. #	# of Features	Form (include shape)	Function
5950	T-1	16	Rock mounds (linear)	Agricultural (associated with sugarcane cultivation)
5951	T-2	1	Irrigation ditch, water pipes, reservoir (irregular)	Agricultural (associated with sugarcane cultivation)
5952	T-3	1	Terraces (irregular)	Agricultural (associated with sugarcane cultivation)
5953	T-4	1	Slag scatter (50 by 35 m)	Work area
5954	T-5	1	Rock wall (linear)	Ranching
5955	T-6	1	Modified rock deposit (irregular)	Indeterminate/Activity Area
5956	T-7	1	Midden and lithic scatter (173 by 141 m)	Activity Area
5957	T-8	1	Terrace (rectangular)	Agricultural (associated with sugarcane cultivation)
2665	T-9	1	2 rock wall segments (linear)	Ranching
4787 Feature D	T-10	1	Lahaina Pump Ditch No. 1	Agricultural (associated with sugarcane cultivation)

SITE DESCRIPTIONS

STATE SITE NUMBER 50-50-03-2665

FORM: Two (2) rock wall segments
FUNCTION: Ranching
AGE: Historic
DIMENSIONS: 1.2 m wide by 1.4 m high
CONDITION: Poor
SURFACE ARTIFACTS: None
EXCAVATION: None

DESCRIPTION: This wall runs along the north and south edges of Launiupoko Gulch. *Mauka* portions of this wall were previously documented by Graves *et al.* (1998) and Haun *et al.* (2001). Graves *et al.* (1998) describe it was a long core-filled wall with a barbed wire fence strung across

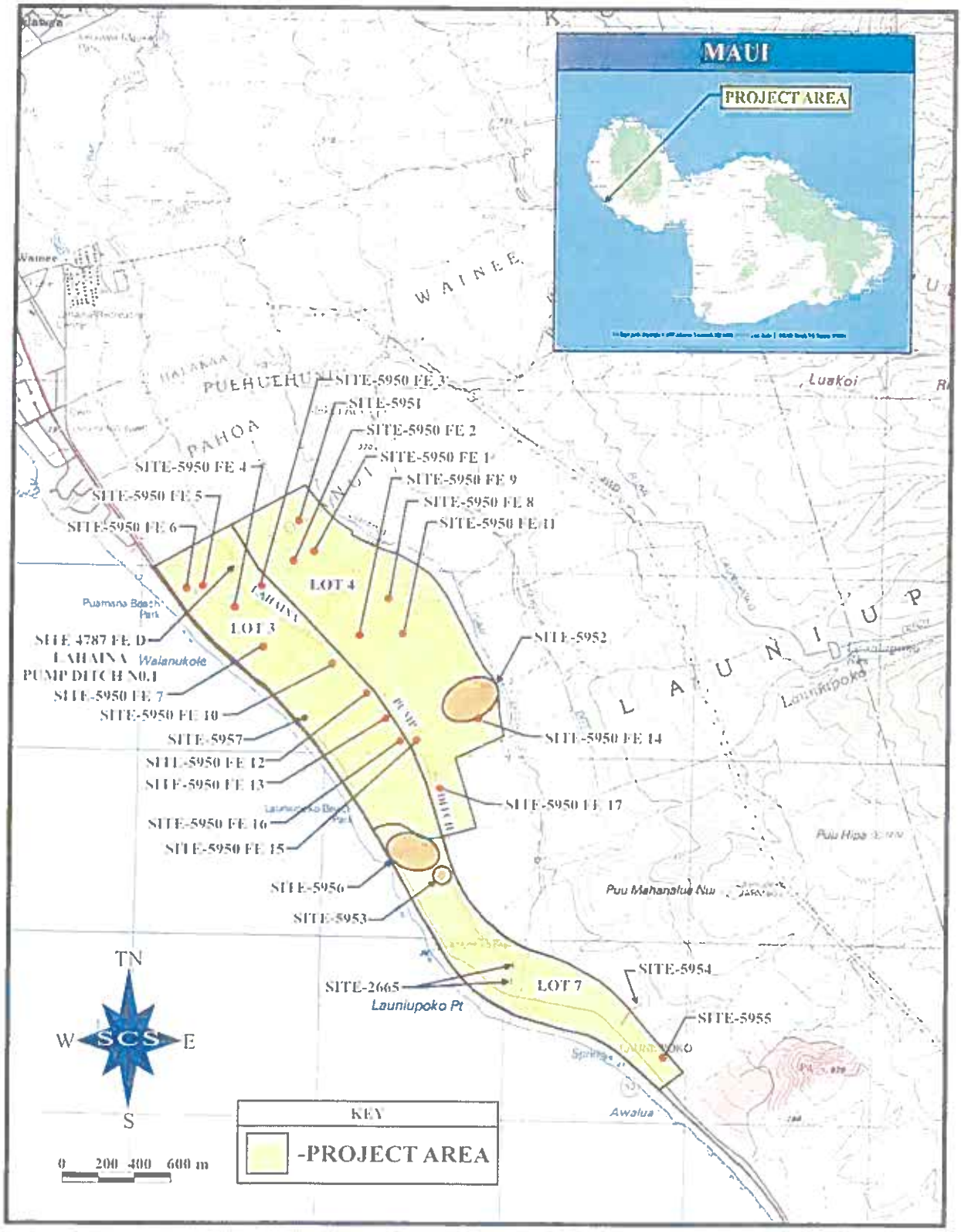

Figure 6: USGS Lahaina Quadrangle Map Showing Site Locations.

the top. It was constructed during the ranching era to keep cattle out of the gulch. The portion of the wall documented during this project consists of two rock wall segments that run along the north and south edges of lower Launiupoko Gulch. The walls are situated on the steep slopes of the gulch in areas of dense vegetation consisting of grass, *kiawe*, and lantana. The walls are largely obscured by vegetation. Not much of the walls remain and what is present is in poor condition. The wall along the south edge of the gulch extends only a very short distance. The wall along the north edge is very disturbed. It is a cobble faced, core-filled wall approximately 1.2 m wide and 1.4 m tall at its highest (Figure 7). The wall is bisected by Lahaina Pump Ditch No. 1 (Site 4787 Feature D) that spans the entire project area and is described below. Recent bulldozing has destroyed the wall 10.0 m east of the ditch.

Figure 7: Photo of Site 50-50-03-2665 Rock Wall on North Side of Launiupoko Gulch.

STATE SITE NUMBER 50-50-03-4787 Feature D

FORM:	Irrigation Ditch
FUNCTION:	Agricultural
AGE:	Historic
DIMENSIONS:	88.0 cm wide by 60.0 cm deep
CONDITION:	Good
SURFACE ARTIFACTS:	None
EXCAVATION:	None

DESCRIPTION: This concrete ditch is identified as the *makai* most Lahaina Pump Ditch on the USGS map (see Figure 1) and as Lahaina Pump Ditch No. 1 on the 1939 Pioneer Mill Company map (see Figure 4). It is also known as the Mill Ditch or the Lahaina Mill Ditch (PHRI 2000). This ditch was one of nine features previously recorded by PHRI (2000). It extends the entire length of the project area through grass covered terrain and crosses over Launiupoko Gulch as a large metal pipe (Figure 8). Portions of the ditch are lined by stone walls but for the most part the ditch is retained by earthen berms. Pipes extending perpendicular from the ditch served as irrigation lines to the sugarcane fields. These pipes contain numerous small trapdoors (Figure 9), which would have controlled the amount of water released into the fields.

STATE SITE NUMBER 50-50-03-5950

FORM:	Seventeen (17) rock mounds
FUNCTION:	Agricultural
AGE:	Historic
DIMENSIONS:	Varied
CONDITION:	Fair to good
SURFACE ARTIFACTS:	Metal cables; historic trash
EXCAVATION:	None

DESCRIPTION: This site consists of 17 rock mounds (Features 1 through 17) associated with sugarcane cultivation. Surface sediments are a silty clay. Visibility around the mounds is limited by a moderate amount of grass. Small *koa haole* trees are also present. The mounds are found throughout Lots 3 and 4 of the project area. They are constructed of very large boulders (greater than 3 tons) and are flat on top. They vary in length from 55.0 m to 100.0 m and in width from 22.0 to 68.0 m. Their long axes follow the gently sloped topography *mauka* to *makai*. They are situated end to end with the *mauka* side graded to ground surface and the *makai* side forming a terrace 15.0 to 20.0 m high (Figure 10). The series of mounds extend downslope east to west to the old railroad in a stair step fashion throughout Lots 3 and 4. The mounds are thought to have been used to transport sugarcane to the rail system below.

Feature 1 is 100.0 m long by 30.0 m wide and has an exterior height of 15.0 to 20.0 m. The top of the mound is composed mainly of cobbles and compact, dried silty clay fill. It is in good condition, however, portions of the south side may have been altered by bulldozers during construction of the road located to the south. A piece of twisted ferrous cable was observed on top of the mound, supporting the idea that the mounds formed some kind of transportation system.

Figure 8: Photo of Site 50-50-03-4787 Feature D Showing Lahaina Pump Ditch No. 1 Crossing Launiupoko Gulch.

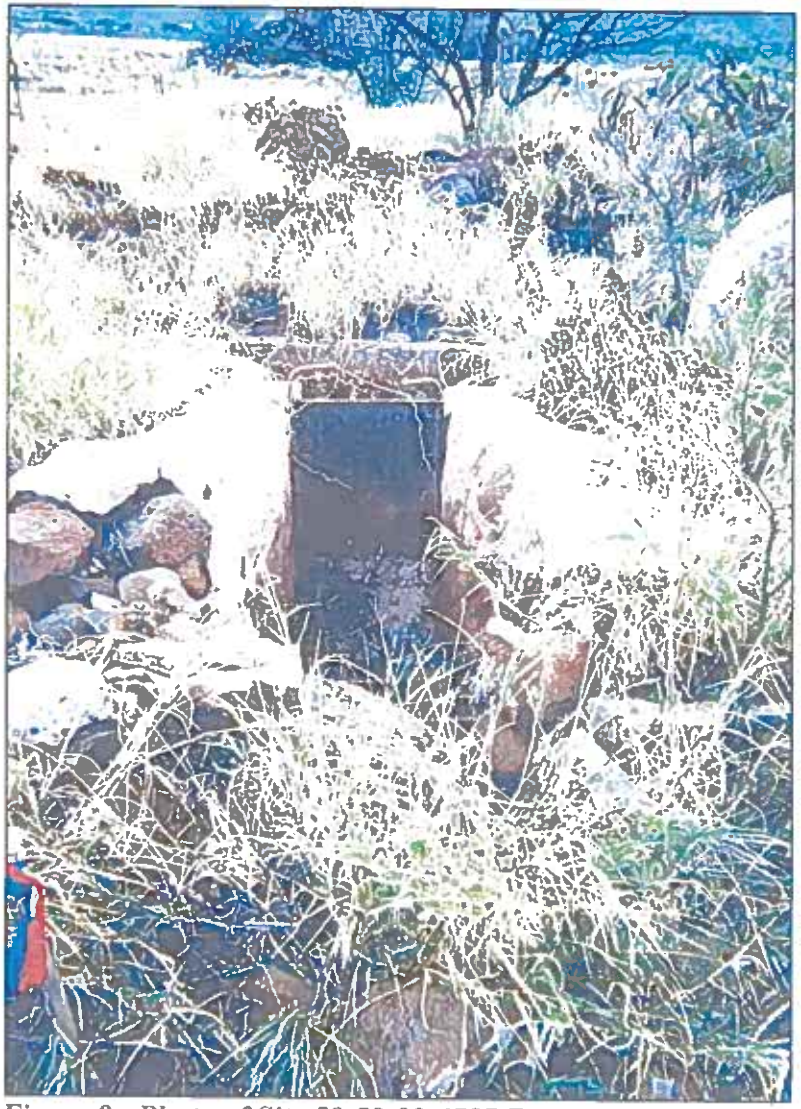

Figure 9: Photo of Site 50-50-03-4787 Feature D Showing One of Many Trapdoors in Lahaina Pump Ditch No. 1.

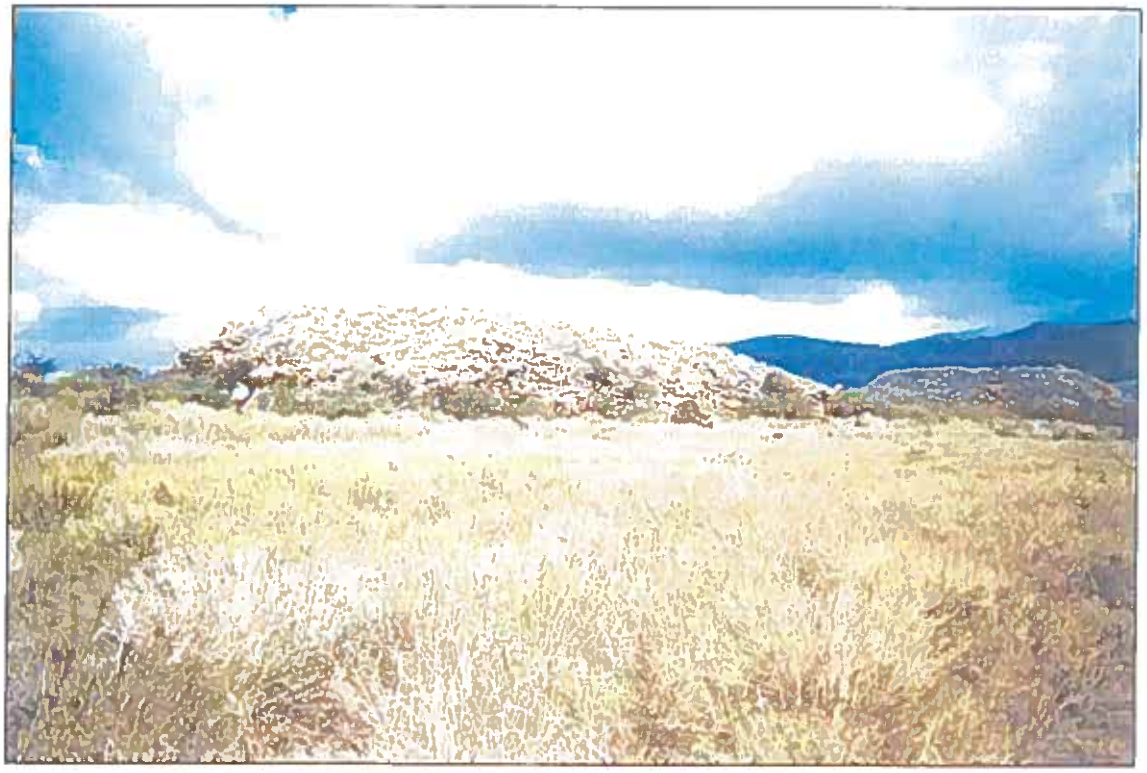

Figure 10: Overview Photo of Site 50-50-03-5950 Feature 2 Rock Mound. Feature 1 is in the Background.

Feature 2 is 70.0 m long by 32.0 m wide. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition but may have been affected bulldozer activity.

Feature 3 is 58.0 m long by 47.0 m wide with an exterior height of 10.0 to 15.0 m on the *makai* end (Figure 11). The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. This mound is in good condition but may have been affected by bulldozer activity as well.

Feature 4 is 81.0 m long by 26.0 m wide with an exterior height of 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. This mound is in good physical condition and has not been altered by bulldozer activity. Historic trash was observed in association with this mound.

Feature 5 is 65.0 m long by 37.0 m wide with an exterior height of 15.0 to 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good physical condition and has not been altered by bulldozer activity. Historic trash was observed in association with this mound.

Figure 11: Photo of the South Side of Site 50-50-03-5950 Feature 3 Rock Mound. View is to the Northwest.

Feature 6 is 82.0 m long by 28.0 m wide with an exterior height of 10.0 to 15.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good physical condition and has not been altered by bulldozer activity. A metal cable was observed in association with this mound.

Feature 7 is 110.0 m long by 24.0 m wide with an exterior height of 15.0 to 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good physical condition and has not been altered by bulldozer activity.

Feature 8 is 78.0 m long by 25.0 m wide with an exterior height of 30.0 m. The top of this mound unlike the previous mounds contains numerous boulders. The boulders are most likely the result of bulldozer activity. A metal cable was observed on the south side of the mound.

Feature 9 is 68.0 m long by 68.0 m wide with an exterior height of 15.0 to 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. The *makai* side of the mound has been altered. A ring of large boulders is present around the *makai* edge of the mound forming a stepped area leading up to the mound. This step may be more recent in origin than the mound.

Feature 10 is 78.0 m long by 31.0 m wide with an exterior height of 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. Piles of old sugarcane are present along the southern edge of the mound.

Feature 11 is 91.0 m long by 23.0 m wide with an exterior height ranging from 15.0 to 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. No cultural material was observed.

Feature 12 is 55.0 m long by 33.0 m wide with an exterior height of 15.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. No cultural material was observed.

Feature 13 is 75.0 m long by 30.0 m wide with an exterior height of 15.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. No cultural material was observed.

Feature 14 is 87.0 m long by 32.0 m wide with an exterior height of 15.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. A metal cable was observed in association with the mound. The feature has been altered by bulldozer piles of old asphalt and gravel debris but the mound is in fair condition.

Feature 15 is 59.0 m long by 34.0 m wide with an exterior height of 10.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. No cultural material was observed. An unnamed gully is present northwest of the mound.

Feature 16 is 93.0 m long by 22.0 m wide with an exterior height of 15.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition. There is evidence for bulldozer activity at the *mauka* end of the mound. No cultural material was observed.

Feature 17 is 76.0 m long by 25.0 m wide with an exterior height of 20.0 m. The top of the mound consists of 80 percent cobbles and gravel with a silty clay fill. The mound is in good condition but has been altered by bulldozer activity.

STATE SITE NUMBER 50-50-03-5951

FORM:	Irrigation ditch, pipes, reservoir, and flume
FUNCTION:	Agricultural
AGE:	Historic
DIMENSIONS:	6.0 m by 2.5 m (includes only reservoir and flume area)
CONDITION:	Good
SURFACE ARTIFACTS:	None
EXCAVATION:	None

DESCRIPTION: The irrigation ditch, pipes, reservoir, and flume form part of the extensive irrigation system constructed by Pioneer Mill Company used for sugarcane cultivation. It is located on terrain that slopes gently to the west. The ground surface is a silty clay sediment. The rather dense vegetation coverage consists of grasses, shrubs, and trees, including *koa haole*, young java plum, and *'opiuma*. This portion of the irrigation system (Figure 12) consists of an underground water pipe that extends northwestward from a main irrigation pipe located 45.0 m to the south. The north end of the pipe terminates at a small concrete reservoir constructed of stones, concrete, and cinder blocks.

Figure 12: Overview Photo of Site 50-50-03-5951 Irrigation Ditch. View is to the Southwest.

A wooden trap door at the *makai* end of the reservoir opens to an irrigation pipe that at one time distributed water to the fields below. This pipe extends all the way down to the western boundary of the project area and eventually leads to a large concrete ditch below. Also

extending from the *makai* side of the reservoir is a 3.0 m long aluminum flume that runs along the south side of the pipe. Overflow from the reservoir was probably diverted into the flume. Grooves on the concrete between the reservoir and the flume suggest a trapdoor was present at one time. Broken gourds are present in the ditch between the reservoir and the main pipe, however, they do not appear to be of great antiquity.

STATE SITE NUMBER 50-50-03-5952

FORM:	Terraces (15+)
FUNCTION:	Agricultural
AGE:	Historic
DIMENSIONS:	248.0 m by 74.0 m
CONDITION:	Good
SURFACE ARTIFACTS:	None
EXCAVATION:	Stratigraphic Trenches (ST) 1 through 7; Test Units 1 and 2

DESCRIPTION: This site is located *mauka* of Site 5950 Feature 14 on a low gently sloping ridge between two unnamed gullies. The area is vegetated with dense grass and individual *kiawe* and *koa haole* trees. The site is a complex of terraces (Figure 13) associated with sugarcane cultivation. The complex is 248.0 m long from east to west and 74.0 m at its widest point. The terraces, oriented perpendicular to the slope, are constructed of small to medium sized basalt boulders mixed with dirt to form berms. Terraces range in height from 15 to 70 cm tall and are spaced approximately 1.0 m apart. Ditches running parallel to the slope, spaced 4.0 to 8.0 m apart, would have served to irrigate the terraces. The larger ditches (55 to 90 cm deep) have concrete water diversions. These terraces are very similar to those reported in Graves *et al.* (1998), PHRI (2000), and Haun *et al.* (2001) who identified them as the remains of manually constructed terraces from the early 1900s that are found in areas not used for mechanized sugarcane cultivation. A complex of such terraces, located *mauka* of this site, is designated Site 2639 (Graves *et al.* 1998).

EXCAVATION: A total of seven stratigraphic trenches (see Figure 13) and two test units were excavated. Five of the stratigraphic trenches (ST-1 through ST-5) were excavated by hand, the remaining two (ST-6 and ST-7) were mechanically excavated with a backhoe. Stratigraphic trenches were excavated perpendicular to the terraces in order to examine their construction.

Stratigraphic Trench 1, measuring 1.0 m by 3.3 m, cross cuts two terraces and is located just south of one of the earthen water channels. Two stratigraphic layers were encountered (Figure 14). Layer I (0–24 cmbs) is a dark brown (7.5 YR 3/3) fine silt containing 20 percent pebbles. Grass roots are common in this layer. In profile this layer dips down lower in the center due to

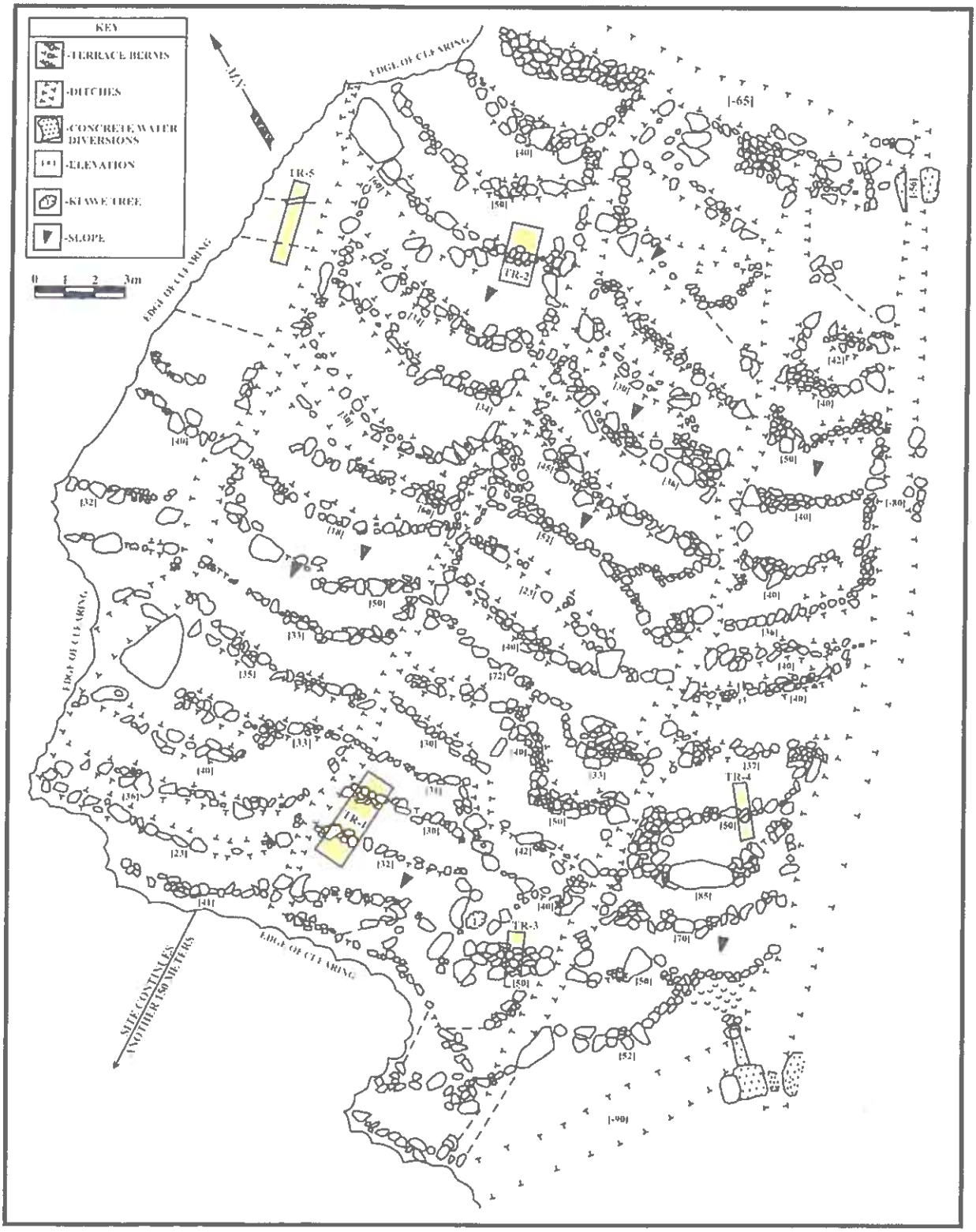

Figure 13: Map of a Portion of Site 50-50-03-5952 Showing the Locations of Stratigraphic Trenches 1 Through 5.

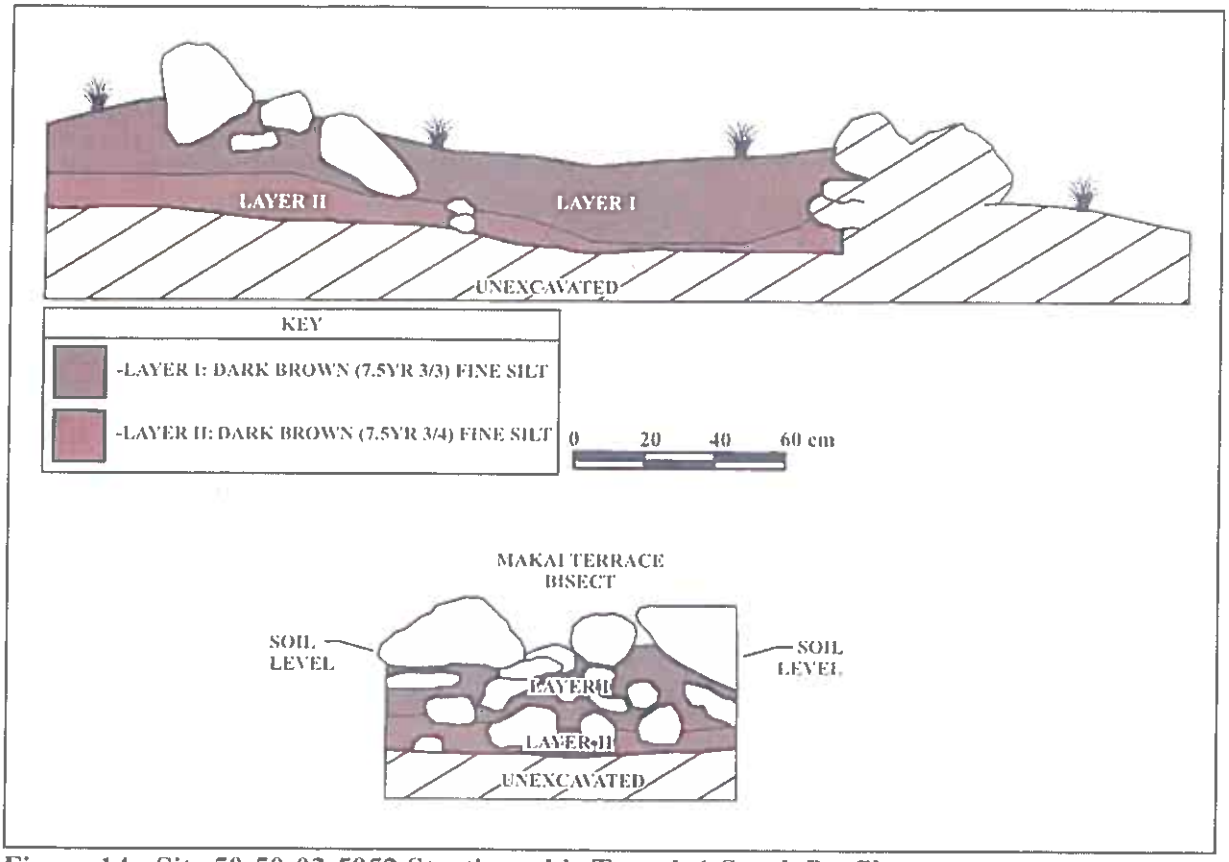

Figure 14: Site 50-50-03-5952 Stratigraphic Trench 1 South Profile.

running water in the channels. A modern nail, four small pieces of coral, and a very small charcoal sample were recovered from this layer. Layer II (24–30 cmbs) is a dark brown (7.5 YR 3/3) fine silt containing 35 percent pebbles and cobbles, and few roots. No cultural material was observed in Layer II.

Stratigraphic Trench 2, measuring 2.0 m by 1.0 m, cross cuts one rock terrace. Material collected from the surface includes slag and cement fragments. Layer I (0–10 cmbs) is a very dark brown (7.5 YR 2.5/3) humic layer containing dense grass roots. Layer II (10–25 cmbs) is a dark brown (7.5 YR 3/3) silty loam that is very rocky. No additional cultural material was observed in this trench.

Stratigraphic Trench 3, measuring 2.0 m by 0.5 m, cross cuts a terrace located next to a water channel. This terrace is wider and is constructed of larger rocks than other terraces in the area. Rocks vary in size from 20 to 60 cm in diameter and are stacked 1 to 3 courses high. Layer I (0–16 cmbs) is a very dark brown (7.5 YR 2.5/2) fine silty loam containing few roots. A charcoal

sample (4 cmbs) was recovered from this layer. Layer II (16–18 cmbs) is a dark brown (7.5 YR 3.3) gravelly silty loam containing roots.

Stratigraphic Trench 4, measuring 2.0 m by 0.5m, cross cuts one rock terrace. Both sides of the terrace were excavated, however, the rock of the terrace was left in place. Layer I (0–18 cmbs) is a dark brown (7.5 YR 3/3) very fine silt containing 10 percent rocks and a fair amount of roots. Layer II (18–24 cmbs) is a dark brown (7.5 YR 3/4) fine silt containing 35 percent rocks and few roots. No cultural material was recovered.

Stratigraphic Trench 5, measuring 3.0 m by 0.6 m, cross cuts two rock terraces. The trench is parallel to a small water channel located to the southeast. Layer I (0–28 cmbs) is a dark reddish brown (10 YR 2.5/3) sandy silt very high in organic material. Layer II is a lens of possibly burnt sediment appearing in patches throughout the trench at approximately 20 cmbs. Charcoal samples, as well as, a bulk soil sample were taken from the lens. Fragments of historic glass were recovered below the Layer II lens.

Stratigraphic Trench 6 was mechanically excavated with a backhoe. The trench, measuring 10.0 m long by 1.0 m wide, cross cuts four terraces. The terraces range from 27 to 65 cm high. A water channel is present to the southwest of the trench and a concrete and rock faced channel is located to the southeast of the trench. Layer I (0–20 cmbs) is a very dark greyish brown (10 YR 3/2) very fine silt containing 1 to 2 percent cobbles and 70 percent grass roots. The peds are friable and the layer boundary appears wavy. No cultural material was observed in Layer I. Layer II (20–35 cmbs) is a dark brown (7.5 YR 3/3) silty clay containing more than 5 percent rootlets. Peds are moderately hard and slightly blocky in structure. Saprolite gravel is present along the bottom boundary which is wavy in nature. No cultural material was observed in Layer II. Layer III (35–80 cmbs) is a dark brown (7.5 YR 3/4) to yellowish brown (10 YR 5/4) silty clay. Peds are very dry and hard to very hard but friable when pressed. Saprolite rocks are present in this layer. No cultural material was observed. Two columns of soil samples were taken from Stratigraphic Trench 6.

Stratigraphic Trench 7 was mechanically excavated with a backhoe. The trench, measuring 14.5 m long by 1.0 m wide, cross cuts a number of terraces ranging in height from 40 to 50 cm and a number of alignments ranging from 15 to 30 cm high. A bulldozer pile is present at the northeast corner of the trench and a water channel crosses the southern end of the trench in an east-west direction. Layer I (0–16 cmbs) is a dark reddish brown (5 YR 3/2) sandy silt that is high in organic material. Layer II (16–38 cmbs) is a dark reddish brown (5 YR 3/3) sandy silt

containing less organic material than the above layer. Layer III (38–53 cmbs) is a dark reddish brown (2.5 YR 3/4) sandy silt containing more than 10 percent gravel. Layer IV (53–76 cmbs) is a dark reddish brown (5 YR 3/3) sandy silt interspersed with rock. No cultural material was observed. Two columns of soil samples were taken from Stratigraphic Trench 7.

Two test units were excavated on a platform identified as Feature 1 (Figure 15 and 16). The platform is located to the northwest of the larger mapped area approximately 60.0 m away. The platform is irregular in shape and appears to have been altered by bulldozing activity. Cobbles on the eastern side of the platform display bulldozer scars. Facing is visible on the north and south sides of the platform. Two test units were placed next to one another on a level area atop the platform.

Test Unit 1 is 50 cm by 50 cm. Layer I (0–28 cmbs) is a dry, greyish brown very fine silt high in organic material. Charcoal and burnt *koa haole* seeds are present in this layer. Both materials were sampled. Layer II (28–42 cmbs) is a dry, reddish brown fine silt with 20 percent gravel and some fine roots. Rocks in this layer made it increasingly difficult to continue excavation.

Test Unit 2 is 50 cm by 50 cm. Layer I (0–26 cmbs) is a dry, greyish brown silt high in organic material. Slag fragments are abundant in this layer. Charcoal and burnt *koa haole* seeds are also present. Layer II (not visible in the north profile) is a dry, reddish brown fine silt with 20 percent gravel and some fine roots. Rocks in this layer made it increasingly difficult to continue excavation. No cultural material was observed in this layer.

STATE SITE NUMBER 50-50-03-5953

FORM:	Slag scatter
FUNCTION:	Work area
AGE:	Historic
DIMENSIONS:	50.0 m by 35.0 m
CONDITION:	Good
SURFACE ARTIFACTS:	Worked slag
EXCAVATION:	Stratigraphic Trenches 1 and 2

DESCRIPTION: This site is a scatter of slag flakes and cores measuring 50.0 m long by 35.0 m wide. It is located in the northeastern portion of Lot 7. The ground surface is very gently sloping and the vegetation coverage consists of burnt grass and *koa haole*. The eastern edge of the site is within an old cane road and the western portion of the site contains earthen berms associated with sugarcane cultivation. The berms range in height from a few centimeters to 20

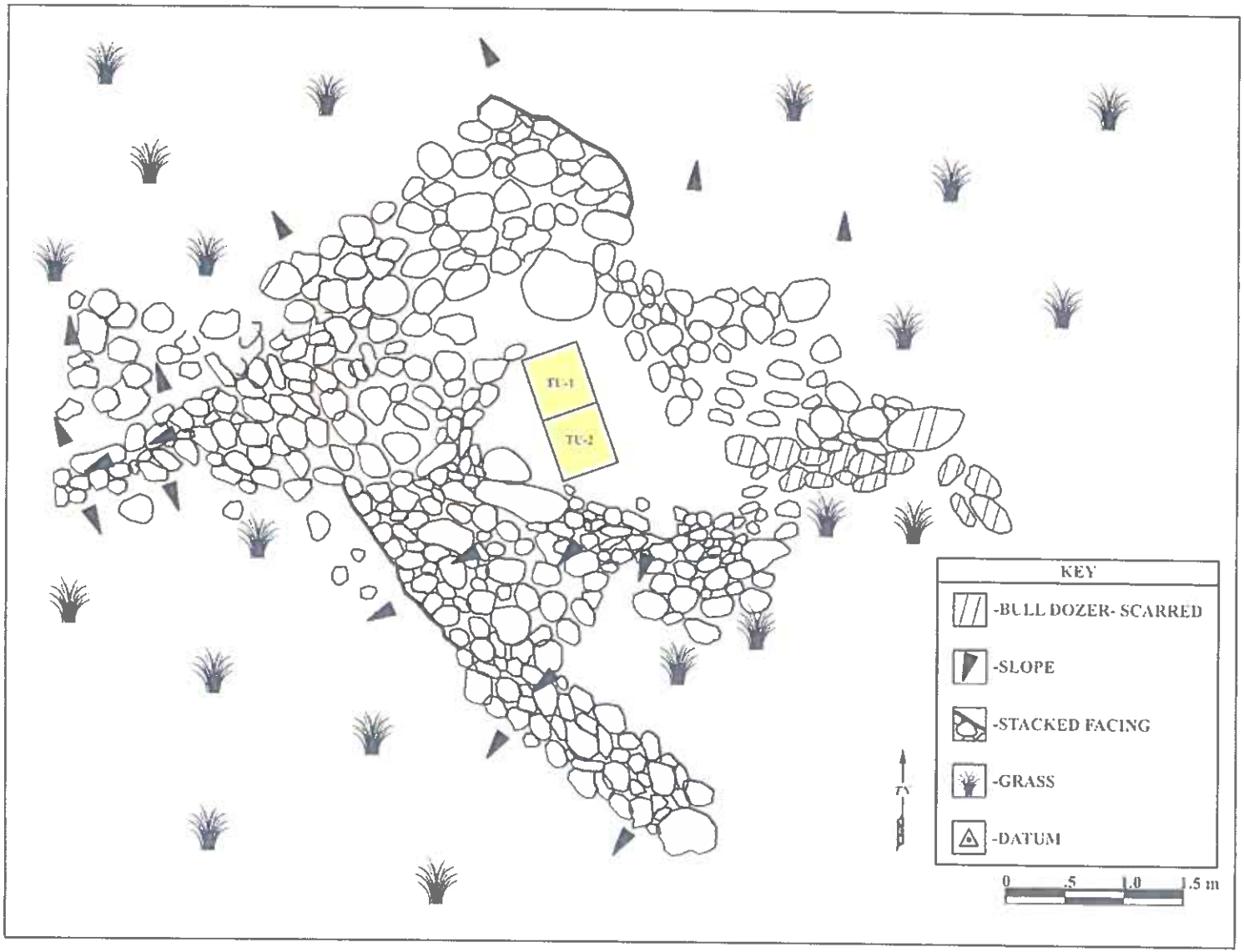

Figure 15: Plan View of Site 50-50-03-5952 Feature 1 Platform.

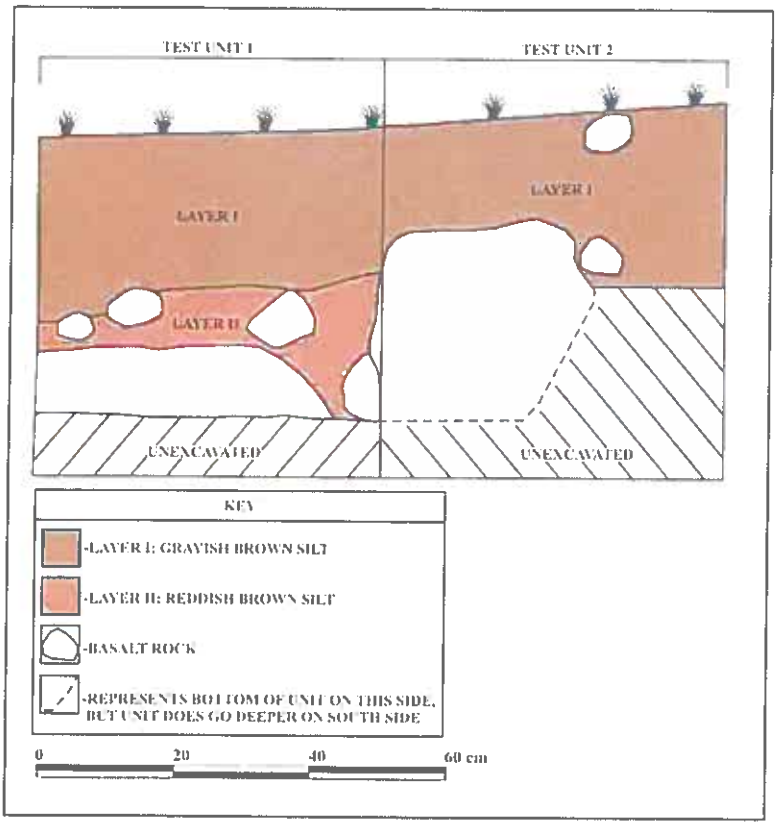

Figure 16: Site 50-50-03-5952 Feature 1 Test Unit 1 (left) and Test Unit 2 (right) North Profile.

centimeters high (Figure 17). The densest concentration of slag is found within the road (Figure 18). Larger pieces of slag are scattered in the area of the berms.

During the Inventory Survey the slag was thought to be volcanic glass. Twenty-one bags of samples were collected off the surface for further analysis. Representative samples were examined by Dr. John Sinton, Professor in the Department of Geology and Geophysics at The University of Hawai'i at Mānoa. Dr. Sinton identified the material as slag, a mill by-product. Like lava, slag is formed from melted rock. During the process of sugar production, rock and dirt is inadvertently melted at very high temperatures producing slag which can have a smooth glassy appearance very similar to volcanic glass (J. Sinton, pers. comm.). In fact, slag is often referred to as human-made "lava" rock. Originating from the same parent material and under similar conditions of extremely high heat, slag has similar flaking properties to volcanic glass. Its usefulness did not go unrecognized. The slag was produced at the Lahaina mill then transported to the site where it appeared to have been utilized. Additional research directly related to the slag is undergoing and will be published in several months in an academic paper.

Figure 17: Overview of Site 50-50-03-5953 Slag Scatter. View is to the West.

Figure 18: Site 50-50-03-5953 Slag Scatter in the Road.

EXCAVATION: Two stratigraphic trenches were mechanically excavated with a backhoe. Stratigraphic Trench 1 is 21.0 m long by 1.0 m wide. A 5.0 m representative profile was drawn of the trench (Figure 19). Layer I (0–20 cmbs) is a dark brown (7.5 YR 3/4) fine silt containing 5 percent rocks and organic material. Layer II (20–46 cmbs) is a dark brown (7.5 YR 3/3) fine silt containing 5 percent rocks and few roots. Layer III (46–60 cmbs) is a dark reddish brown (5 YR 3/3) silt containing 10 percent rocks. No cultural material was recovered during excavation.

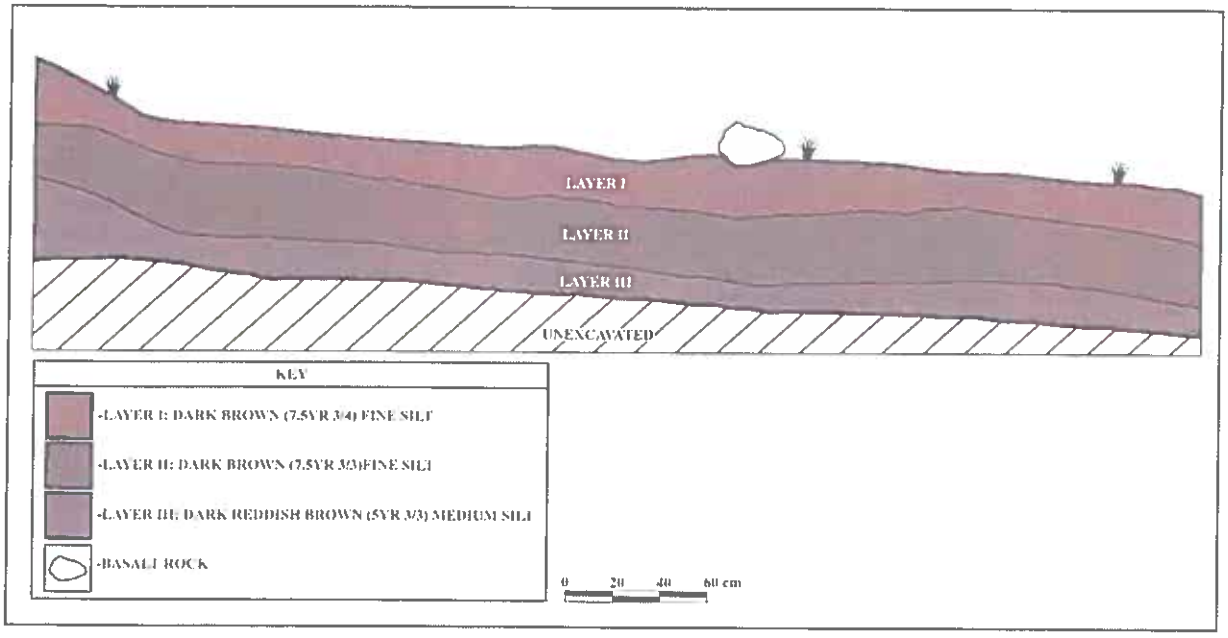

Figure 19: Site 50-50-03-5953 Stratigraphic Trench 1 South Profile (5 Meter Representation).

Stratigraphic Trench 2 is 20.0 m long by 1.0 m wide. A 5.0 m representative profile was drawn of the trench. Layer I (0–40 cmbs) is a dark brown (7.5 YR 3/3) sandy silt containing roots in the top 10 cm. Layer II (40–62 cmbs) is a dark yellowish brown (10 YR 4/4) saprolite. No cultural material was recovered during excavation.

STATE SITE NUMBER 50-50-03-5954

FORM:	Rock wall
FUNCTION:	Ranching
AGE:	Historic
DIMENSIONS:	169.5 m by 1.5 m
CONDITION:	Good
SURFACE ARTIFACTS:	None
EXCAVATION:	None

DESCRIPTION: This rock wall (Figure 20), located near the south end of the project area in Lot 7, is a cattle wall from the ranching era. It extends downslope from near the eastern project

Figure 20: Mauka End of Site 50-50-03-5954 Rock Wall. View is to the Southwest.

boundary through dense grass, shrubbery, and trees, including *koa haole*. This core-filled wall is constructed of weathered, poor quality, subangular basalt. The wall exterior is composed of cobbles ranging in size from 40 to 90 cm in diameter. The wall stands 2 to 6 courses high and is faced. The cobble filling ranges in size from 10 to 30 cm in diameter. The top of the wall is fairly level. No cultural material was observed in association with this wall.

STATE SITE NUMBER 50-50-03-5955

FORM:	Modified rock deposit
FUNCTION:	Indeterminate
AGE:	Indeterminate
DIMENSIONS:	20.0 m by 14.0 m
CONDITION:	Good
SURFACE ARTIFACTS:	Coral fragments
EXCAVATION:	Test Units (TU) 1 and 2; Shovel Probes (SP) 1 through 10

DESCRIPTION: This site consists of several potentially "modified" rock concentrations occurring on a rocky slope (Figure 21). The site is located downslope from several other amorphous rock concentrations that are outside the project area. Linear mounds resulting from road construction are present to the south and a water channel occurs to the north. Grass, *'ilima*, and burnt *kiawe* provide moderate vegetation coverage. This tri-level rock concentration

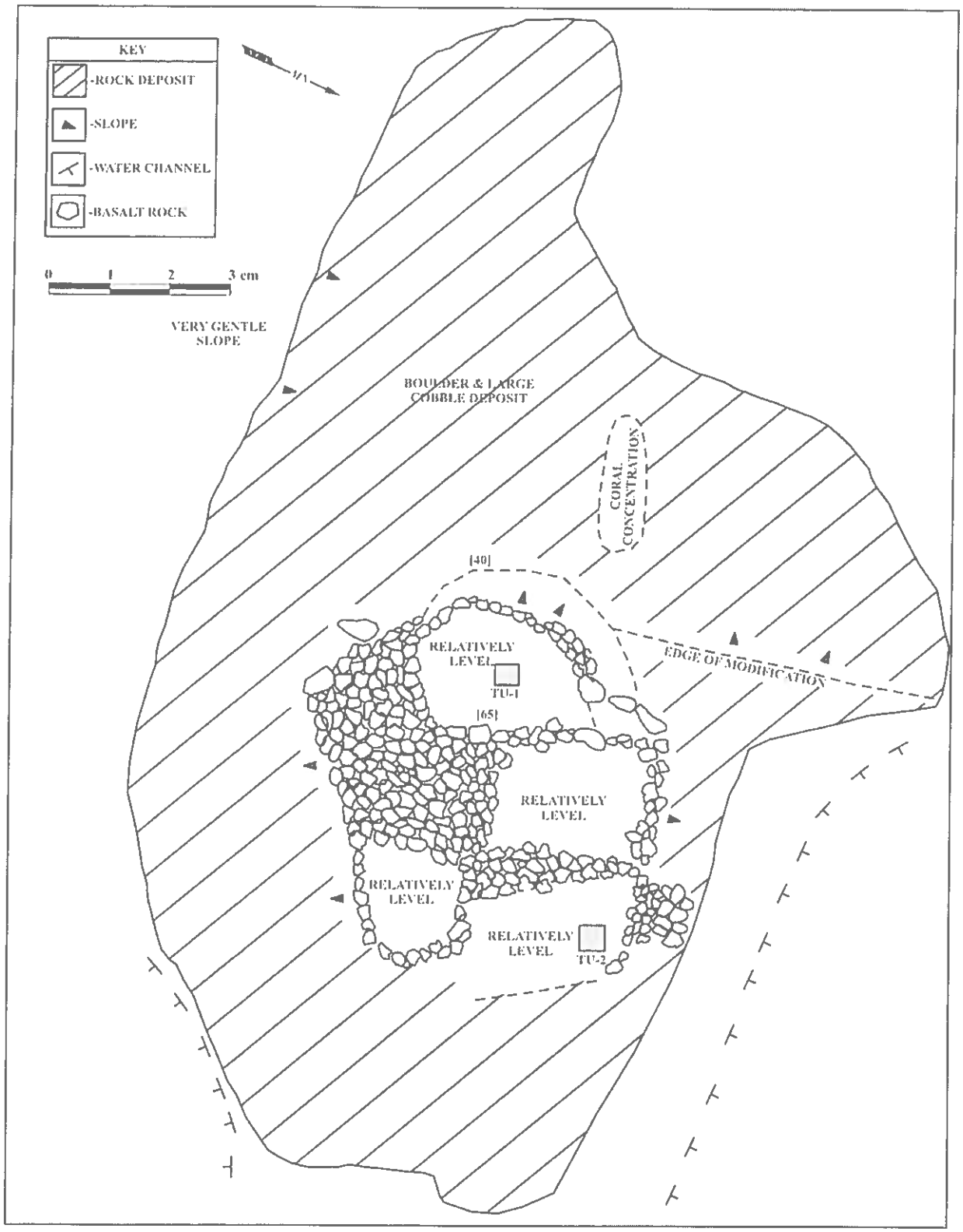

Figure 21: Plan View of Site 50-50-03-5955 Modified Rock Deposit.

contains two relatively level areas on its upper slopes. A larger rock deposit with no visible formal construction is located on the lower slopes of the feature where two additional relatively level areas are present. Several large pieces of branch coral and other coral fragments are present to the northwest, downslope of the modified portion of the feature. According to the field crew, the coral fragments appeared to have eroded (water erosion) to this location from the upper portions of the slope. The crew also noted that coral pieces were common in lower areas, this not surprising considering the proximity of this area to the coastline. The age and function of this feature are indeterminate and may simply be a modest activity area. As shown below, excavations did not show this feature to be more complex than documented from surface characteristics.

EXCAVATION: Two test units were excavated in two of the level areas on the rock deposit. Test Unit 1 is 50 cm by 50 cm. Layer I (0–35 cmbs) is a very dry, grey brown silt containing some sand and 25 percent pebbles and cobbles. The unit was terminated upon encountering large boulders. No cultural material was recovered from this unit.

Test Unit 2 is 50 cm by 50 cm. One layer was identified and excavated in two levels (Figure 22).

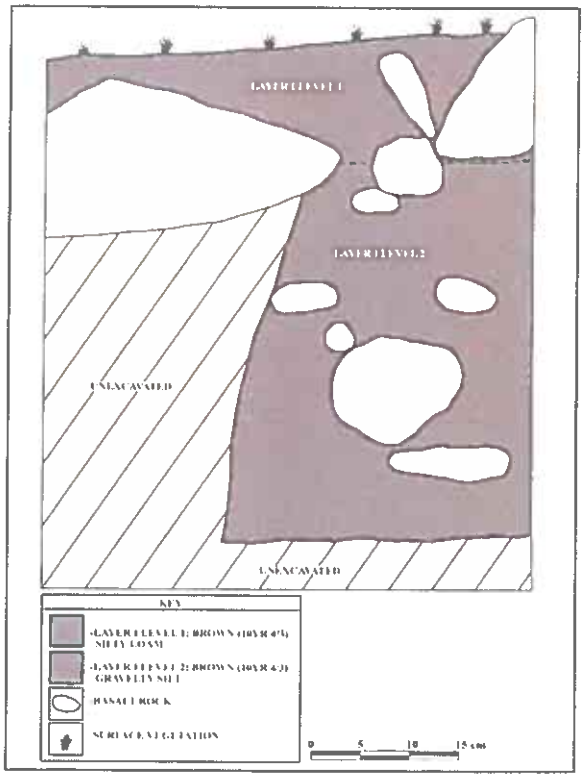

Figure 22: Site 50-50-03-5955 Test Unit 2 North Profile.

Layer I level 1 (0–12 cmbs) is a brown (10 YR 4/3) silty loam containing more than 50 percent rocks (cobble size and larger) and organic material. No cultural material was recovered from this level. Layer I level 2 (12–52 cmbs) is a brown (10 YR 4/3) very gravelly silt containing large cobbles and small boulders. The west end of the unit is dominated by very large rocks that were not removed. One coral fragment was recovered from this unit.

Ten shovel probes (Figure 23) (Table 2) were placed at regular intervals on a level area along the southwest edge of the modified feature. The shovel probes and their depths are presented below. No cultural material was recovered from any of the probes. Shovel Probes 5 and 8 were not excavated due to the lack of cultural material in the other probes.

Table 2: Shovel Probe Depths.

Shovel Probe	Depth (cmbs)
1	40
2	32
3	17
4	24
5	Not Excavated
6	24
7	20
8	Not Excavated
9	21
10	5

Shovel Probe 1 was the only probe that yielded any material. This probe was excavated to a maximum depth of 40 cmbs. Layer I (0–25 cmbs) is a very rocky, dark greyish brown (10 YR 4/2) silt. Four very small pieces of coral were collected from Layer I. Layer II (25–40 cmbs) is a very rocky, dark grey (10 YR 4/1) silt. This layer appears to represent either a stream or flood deposit based the presence of waterworn pebbles and gravel. No cultural material was recovered.

STATE SITE NUMBER 50-50-03-5956

FORM:	Shell midden and lithic scatter
FUNCTION:	Indeterminate
AGE:	Historic and possibly prehistoric
DIMENSIONS:	173 m by 141 m
CONDITION:	Fair
SURFACE ARTIFACTS:	Shell midden, lithics, metal and grass fragments
EXCAVATION:	Stratigraphic Trenches 1 and 2

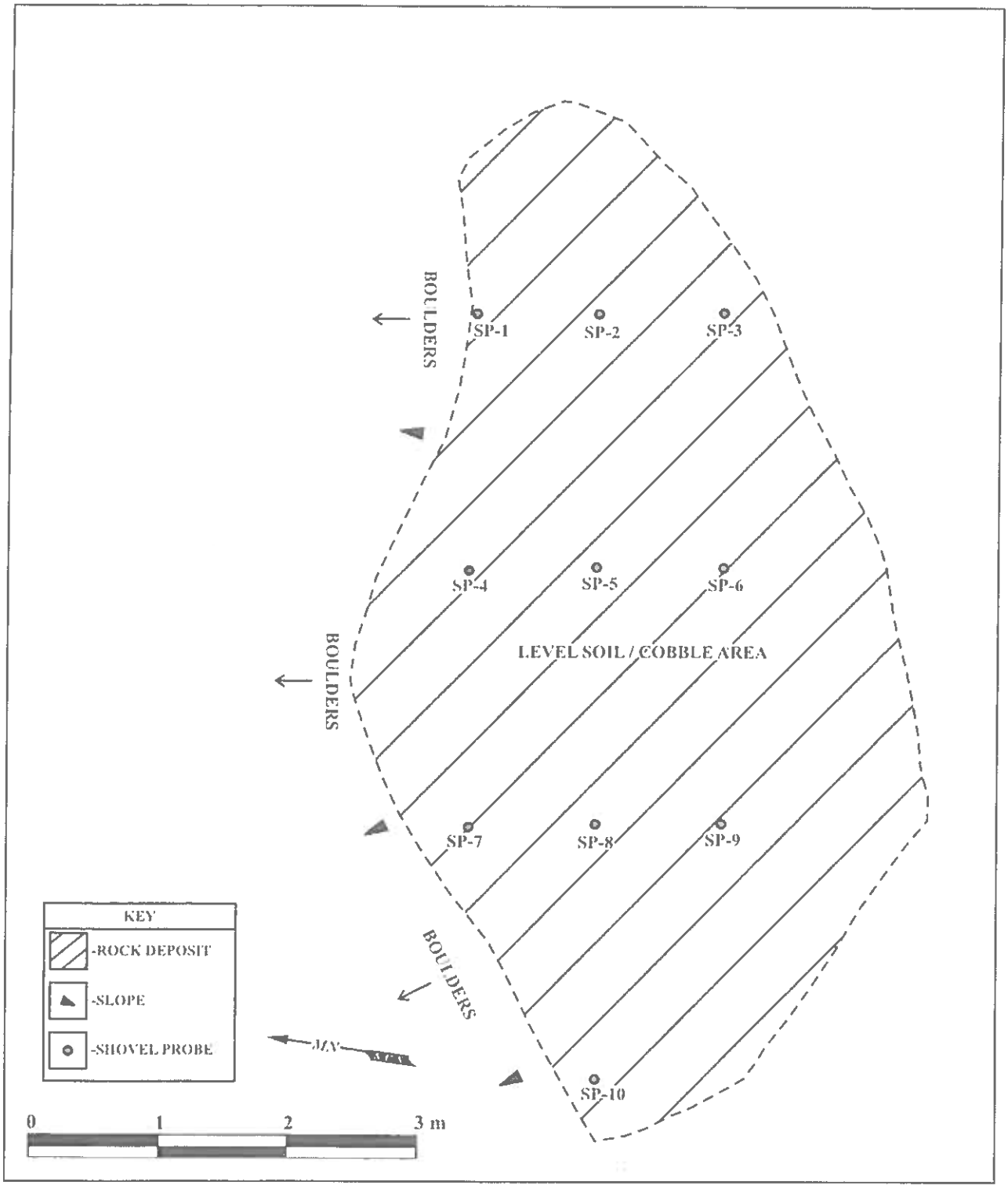

Figure 23: Plan View of Site 50-50-03-5955 Shovel Probes.

DESCRIPTION: This site is a large shell midden and lithic scatter with sparse historic debris, including glass and metal fragments. The area was heavily modified during the plantation era by the formation of earthen berms. The ground cover consists of sparse grass due to recent burning, therefore, visibility is good. Material appears to be more or less evenly distributed throughout the site.

Surface material was collected from two areas (Areas A and B). Different sampling strategies were used for each of the areas. Area A is approximately 170.0 m long by 85.0 m wide and covers approximately 14,450 sq m. Material collected consists of marine shells, coral, waterworn basalt, basalt flakes and cores, and historic debris, including metal railroad spikes and various colored glass fragments.

Area B is located northwest of Area A. Area B is irregular in shape and covers approximately 3,150 sq m. Only a portion of this area was sampled. A 20.0 m long by 10.0 m wide area was divided into eight 5.0 m by 5.0 m squares labeled Blocks A through H. The material collected from each block is summarized below (see also Appendix A).

Table 3: Material Collected from Blocks.

Block	Material Collected
A	marine shells, coral, basalt and slag flakes, glass fragments, metal
B	coral, basalt flake
C	marine shells, slag core, glass fragments, bisque potsherd
D	marine shells, coral, glass marble
E	marine shells, small mammal bone fragment, basalt and slag flakes, glass fragment
F	marine shells, coral, glass fragment
G	marine shells, basalt flakes, glass fragments, bisque potsherd
H	marine shell, coral, basalt and slag flakes, glass fragments, aluminum

The marine shells collected are very fragmentary and have suffered structural wear either from natural or human induced causes and therefore lack specific diagnostic features. Among the species identified are *Littorina* sp., *Conus* sp., *Cypraea* sp., and *Cellana* sp. (*`opihi*) which were extremely well liked as a food item and were reportedly the most commonly eaten shells in the Hawaiian Islands (Kay in Titcomb 1979). *`Opihi* shells were also good instruments for scooping, peeling, and scraping because of their sharp edges (Titcomb 1978). Other species identified include *Anachis miser*, which are common in shallow water and found on the fronds of certain kinds of algae. *Drupa ricina* and *Nerita picea, which* are found on rocky substrates, and *Nerita neglecta* (also called *Theodoxus neglecta*), *which* are found both in sea and brackish water.

Nerita picea and *Nerita neglecta*, called *pipipi* by the Hawaiians, were eaten as food and their shells used for lei (Kay 1979:63). *Cassis cornuta* which was eaten as food and whose shells were used as trumpets (Titcomb 1978) and *Purpura aperta* which was also eaten by the Hawaiians (Kay 1979) may also be present in the assemblage.

The basalt and slag flakes show an interesting adaptive behavior between different "lithic" materials being used for presumably similar purposes. The presence of the basalt flakes, while implying a prehistoric component, does not necessarily lead to the inference that they were deposited during prehistoric times. The slag flakes are undoubtedly historic in nature. The presence of both will be further assessed as part of a more in-depth study of the slag and slag flaking.

EXCAVATION: Two stratigraphic trenches were mechanically excavated with a backhoe. Stratigraphic Trench 1, 29.0 m long by 1.0 m wide, is located 18.5 m away from the northeast corner of the site. Layer I (0–30 cmbs) is a very dark brown (7.5 YR 2.5/3) sandy silt that is high in roots and burnt organic material and contains more than 5 percent gravel. The charred material originates from burning that took place one year ago. Layer II (30–50 cmbs) is a very dark brown (7.5 YR 2.5/3) sandy silt containing more than 10 percent gravel and cobbles. Layer III (50–80 cmbs) is a dark reddish brown (5 YR 3/4) and yellowish red (5 YR 4/6) sandy silt containing some gravel and saprolite. No cultural material was recovered during excavation.

Stratigraphic Trench 2 (Figure 24), 25.0 m long by 1.0 m wide, is located 28.5 m *makai* of Stratigraphic Trench 1. Layer I (0–30 cmbs) is a very dark brown (7.5 YR 2.5/3) sandy silt containing more than 5 percent rock and a high amount of organic material. Layer II (30–50 cmbs) is a dark brown (7.5 YR 3/3) sandy silt containing more than 10 percent rock. This layer is not continuous throughout the whole trench. Layer III (50–80 cmbs) is a dark yellowish brown (10 YR 4/4) saprolite. No cultural material was recovered during excavation.

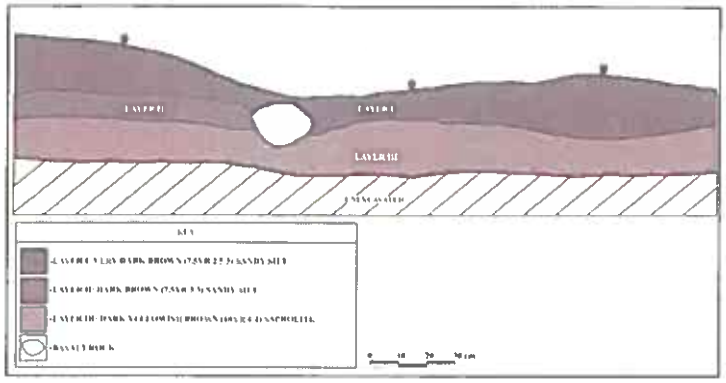

Figure 24: Site 50-50-03-5956 Stratigraphic Trench 2 South Profile.

STATE SITE NUMBER 50-50-03-5957

FORM:	Terrace
FUNCTION:	Agricultural
AGE:	Historic
DIMENSIONS:	9.5 m by 4.0 m
CONDITION:	Good
SURFACE ARTIFACTS:	None
EXCAVATION:	Test Unit 1

DESCRIPTION: This site consists of a terrace on the edge of an unnamed gulch (Figure 25). The terraced area is 9.5 m long by 4.0 m wide and is relatively level. Two additional terraces may be present on top of the level area. The terraced area is bound by a pile of mechanically pushed boulders to the south, earthen berms to the east and west, and an unnamed gulch to the north. The terrace face is constructed of cobbles and boulders stacked up to 90 cm high in some areas. The terrace has been altered by bulldozing activity and one section of the terrace face has been disturbed by cattle.

EXCAVATION: Test Unit 1 (Figure 26) measures 1.0 m by 1.0 m and is located in the northwest portion of the terrace directly behind the terrace wall. Layer I (0–7 cmbs) is a very dark brown (7.5 YR 2.5/2) fine silt containing 25 percent rocks. Layer I is ashy and contains large burnt roots due to recent burning. Layer II (7–23 cmbs) is a dark reddish brown (5 YR 3/3) silt. This layer is coarse grained and contains 70 percent pebbles. Layer III (23–41 cmbs) is a dark brown (7.5 YR 3/3) silt containing 30 percent rocks. Layer IV (41–58 cmbs) is a dark brown (7.5 YR 3/3) silt that is more compact and less rocky than Layer III. Layer V (58–63 cmbs) is a dark brown (7.5 YR 3/2) silty sand that is slightly more compact that Layer IV and contains fewer rocks.

DISCUSSION AND CONCLUSIONS

A total of ten sites were identified during Inventory Survey of large land parcels near coastal Launiupoko. A majority of the sites are historic in age. Five of the ten sites are associated with the sugarcane plantation era. These sites include large rock mounds, terraces, and irrigation ditches. One of the ten sites is a scatter of slag fragments and cores interpreted to be a historic work/dumping area. As slag is a mill by-product, the slag scatter is historic in age. The function and age of Sites -5955 and -5956 are indeterminate but both can be viewed as activity areas likely related to historic times. Only negative results were obtained during subsurface testing.

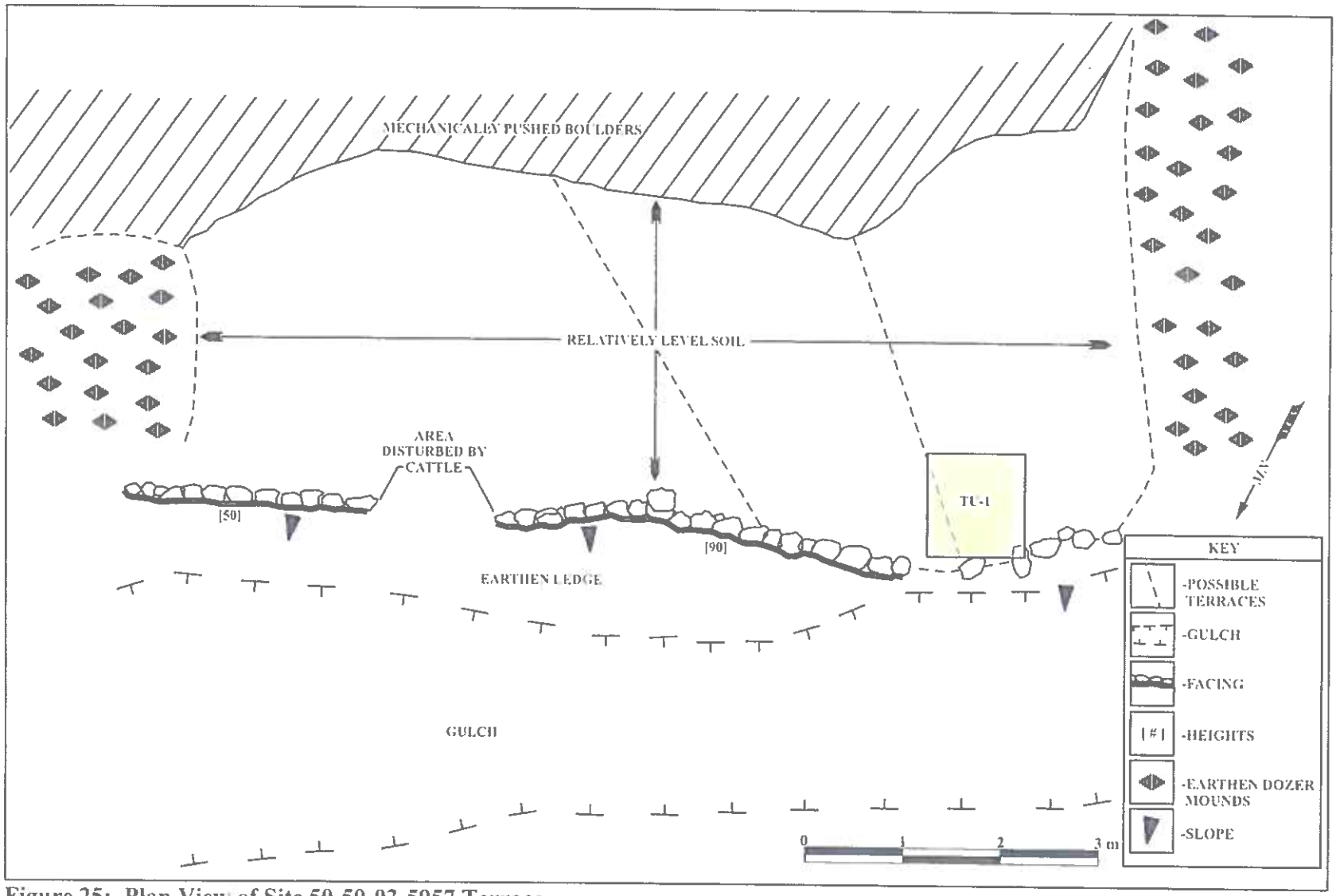

Figure 25: Plan View of Site 50-50-03-5957 Terrace.

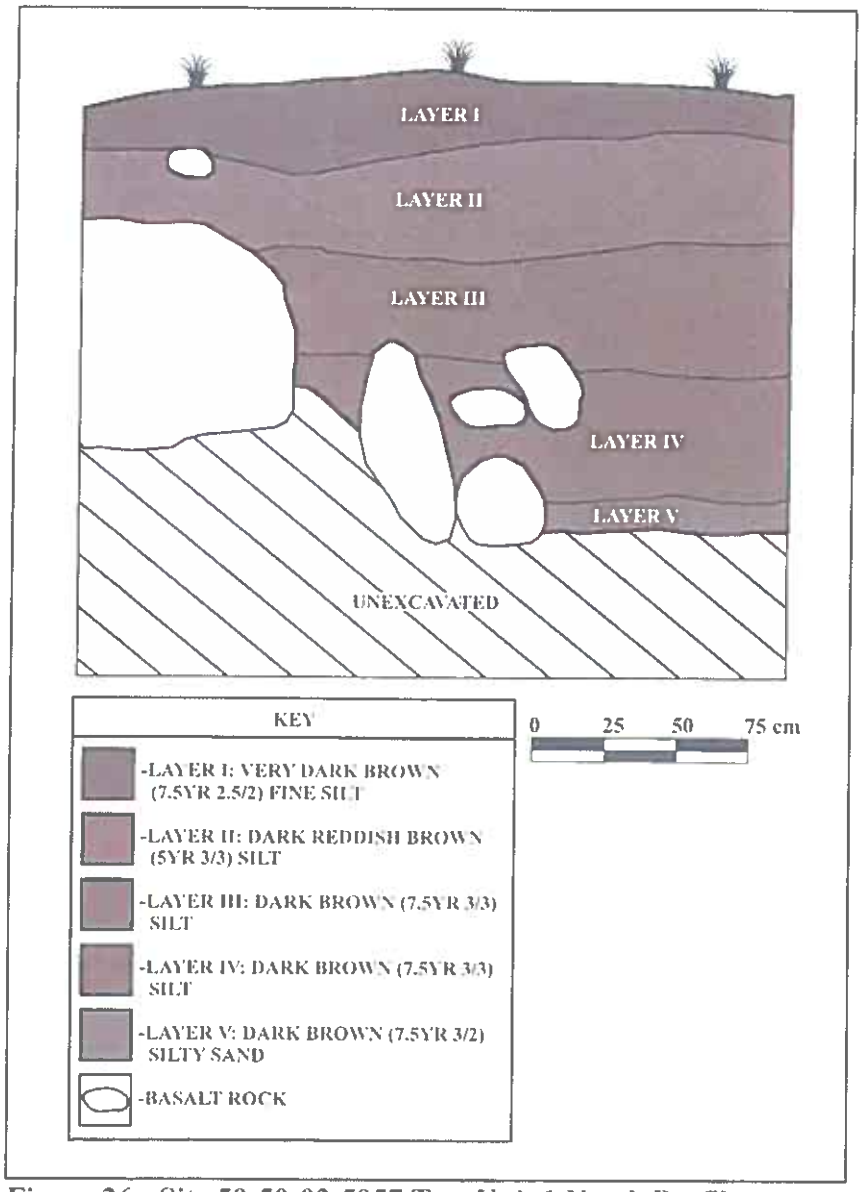

Figure 26: Site 50-50-03-5957 Test Unit 1 North Profile.

As expected, a majority of the sites identified during Inventory Survey are historic in age and are associated with either the plantation era or subsequent cattle ranching activities. These findings were "expected" based on the location of the project area: near modern infrastructure (highway, roadways) and on only moderately sloping lands (prime sugar cane cultivation land). The project area has been tremendously impacted by sugarcane cultivation practices through time. The large mounds composing Site -5950 indicate massive landscape clearance of rocks and boulders across this lower portion of the Launiupoko landscape. Even one flying near the project area in a commercial airplane is acutely aware of landscape alterations in Launiupoko.

However, only the lower portions of the landscape appear to have been most massively altered. Archaeological work occurring to the east (upslope) has revealed the presence of numerous prehistoric sites ranging from temporary work areas to habitation loci and ceremonial places dating from the c. A.D. 1200s (Graves *et al.* 1998; Haun and Henry 2001; Haun *et al.* 2001; Dega *et al.* 2006). The difference between the presence/absence of significant sites (or even prehistoric site presence) appears to primarily have been based on location. The lower areas were more amenable to sugar cane cultivation and were much drier. More *mauka* reaches contained undulating topography not necessarily as favorable to industrial-level sugar cane cultivation and also contained a different climate: wetter, a denser arboreal component, and deeper soils. Note that the difference between these two regions of Launiupoko is only 1-2 kilometers in distance. Overall, it appears as though occupants of the Launiupoko area, from the A.D. 1200s through historic times, had established a symbiotic relationship between their goals (farming, habitation, cultivation) and the micro-climates and micro-topography of the area. This appears one reason few sites were documented during this Inventory Survey in the lower reaches.

Finally, the current project occurs above the coast and below any real elevation gains along fairly modest undulating slopes. This area could be considered a relative "barren zone" compared to the other two resource areas. This is somewhat proven by the nature of sites in the coastal and slightly upland zones, when compared with this intermediate area. These intermediate were often the location of the most intensive historic use so may only be considered as "barren zones" for a short portion of history.

SITE SIGNIFICANCE ASSESSMENTS AND RECOMMENDATIONS

These sites have been evaluated for significance according to the criteria established for the Hawai'i State Register of Historic Places. The five criteria are presented below:

Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Site is associated with the lives of persons significant to our past

Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction

Criterion D: Site has yielded or has the potential to yield information important in prehistory or history

Criterion E: Site has cultural significance to an ethnic group; examples include religious structures, burials, major traditional trails, and traditional cultural places

All of the sites identified during Inventory Survey are significant under Criterion D. At this juncture, all the sites have been thoroughly mapped and recorded. Archaeological Monitoring will be required at Site 50-50-03-5950 in the event that these mounds are dismantled in conjunction with the areas development. With the exception of Site 50-50-03-5950 no further work is recommended for the additional sites. As the project area has been tremendously altered by sugarcane cultivation and subsurface testing yielded negative results, the presence of intact subsurface cultural deposits appears very low. With the exception of Archaeological Monitoring at Site 5950 no further archaeological testing work is recommended in the project area.

REFERENCES CITED

Ashdown, I.
1970 *Ke Alaloa O Maui, The Broad Highway of Maui.* Ace, Wailuku, Maui.

Armstrong, R.W. (Editor)
1983 *Atlas of Hawaii.* 2nd Edition. University of Hawaii Press, Honolulu.

Barrera, W.
1988 *Honoapiilani Highway, Maui: Archaeological Reconnaissance.* Chiniago, Inc., Honolulu. Prepared for Environmental Communication, Inc.

Chinen, J.
1994 *The Great Māhele: Hawaiian Land Division of 1848.* University of Hawaii Press, Honolulu.

Condé, J.C.
1973 *Sugar Trains: Narrow Gauge Rails of Hawaii.* Glenwood Publishers, Felton.

Dega, M., D. Terry, and A. Johnson
2006 *An Archaeological Inventory Survey of 570.3-Acres in the Launiupoko (Large Lot, Phase V) Subdivision No. 2, Launiupoko Ahupua`a, District of Lahaina (Formerly Ka`anapali), Island of Maui, Hawai`i [TMK: (2) 4-7-001:002].* Scientific Consultant Services, Inc., Honolulu. Prepared for West Maui Land Company, Inc.

Donham, T.K.
1991 *Field Inspection of a Proposed Culvert Location, USDA-SCS Lahaina Watershed Project, Polanui Lahaina District, Maui (TMK: 4-7-01:18).* Department of Land and Natural Resources, State Historic Preservation Division, Maui Section.

Foote, D.E., E. Hill, S. Nakamura, and F. Stephens
1972 *Soil Survey of the Islands of Oahu, Maui, Molokai, and Lanai, State of Hawaii.* U.S. Department of Agriculture Soil Conservation Service, Washington, D.C.

Fornander, Abraham
1916–1920 *Fornander Collection of Hawaiian Antiquities and Folk-lore.* Memoirs of the Bernice Pauahi Bishop Museum, Vols. 4–6. Bishop Museum Press, Honolulu. (1916–1917 = Vol. 4, 1918–1919 = Vol. 5, 1919–1920 = Vol. 6).

1969 *An Account of the Polynesian Race: Its Origins and Migrations, and the Ancient History of the Hawaiian People to the Times of Kamehameha.* Vols. 1–3. Charles E. Tuttle & Co., Rutland.

Foreign Register
n.d. Foreign Register of Kuleana Claims Recorded by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands. Manuscript on file at the Hawai`i State Archives.

Foreign Testimony
n.d. Foreign Testimony Recorded by the Commissioners to Quiet Land Titles in the Hawaiian Islands. Manuscript on file at the Hawai`i State Archives.

Gilmore, A.B.
1936 *The Hawaii Sugar Manual*. Unknown binding. New Orleans.

Goodwin, C. and S. Leineweber
1997 *Lands of the Pioneer Mill Company: Archaeological Inventory Survey Report, Pioneer Mill Company, Ltd., Sugar Enterprise Lands, Site No. 50-50-03-4420, Villages of Leiali`i Project, Lahaina, Maui, Hawaii.* International Research Institute, Inc. Prepared for Housing Finance and Development Corporation, Honolulu.

Graves, D.K., S. Goodfellow, and A.E. Haun
1998 *Archaeological Inventory Survey Launiupoko Development Parcel: Land of Launiupoko, Lahaina District, Island of Maui (TMK: 2-4-7-01:2).* Paul H. Rosendahl, Ph.D., Inc., Hilo. Prepared for Launiupoko LLC.

Handy, E.S.C and E.G. Handy
1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment.* Bernice P. Bishop Museum Press Bulletin 233. Bishop Museum Press, Honolulu.

Handy, E.S.C
1940 *The Hawaiian Planter*. Bernice P. Bishop Museum Press Bulletin 161. Bishop Museum Press, Honolulu.

Haun, A.E. and D. Henry
2001 *Archaeological Inventory Survey, Proposed 124-Acre Makila Subdivision, Lands of Launiupoko, Polanui, and Puehuehunui, Lahaina District, Island of Maui [TMK: 4-7-01: Por. 1 and TMK: 4-7-04: Por. 4).* Haun and Associates, Keaau. Prepared for Makila Land Co., LLC.

Haun, A.E., D. Henry, and M.E. Orr
2001 *Archaeological Inventory Survey Portion of TMK: 4-7-01:02, Land of Launiupoko, Lahaina District, Island of Maui.* Haun and Associates, Keaau. Prepared for Makila Land Co., LLC.

Indices of Awards
n.d. Indices of Awards Made by the Board of Land Commissioners to Quiet Land Titles in the Hawaiian Islands. Territory of Hawaii, Honolulu.

Jensen, P.
1991 *Archaeological Inventory Survey, Honoapiilani Highway Realignment Project, Lahaina Bypass Section-Modified Corridor Alignment, Lands of Honokowai, Hanakaoo, Wahikuli, Panaewa, Kuia, Haiakaa, Puehuehunui, Pahoa, Polanui, and Launiupoko, Lahaina District, Island of Maui*. Paul H. Rosendahl, Ph.D., Inc., Hilo.

Kay, E.A.
1979 *Hawaiian Marine Shells, Reef and Shore Fauna of Hawaii, Section 4: Mollusca*. Bernice P. Bishop Museum Special Publication 64(4). Bishop Museum Press, Honolulu.

Kamakau, S.M.
1992 *Ruling Chiefs of Hawaii*. Kamehameha Schools Press, Honolulu.

Kame`eleihiwa, L.
1992 *Native Land and Foreign Desires: Pehea La E Pono Ai?* Bishop Museum Press, Honolulu.

Kirch, P.
1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.

Morawski, L., A. Johnson, T. Patolo, and M. Dega
2006 *An Archaeological Inventory Survey of 520 Acres in the Launiupoko (Large Lot) Subdivision No. 2, Launiupoko Ahupua`a, District of Lahaina (Formerly Ka`anapali), Island of Maui, Hawai`i [TMK (2) 4-7-001:002 por.]*. Scientific Consultant Services, Inc., Honolulu. Prepared for West Maui Land Company, Inc.

Native Register
n.d. Native Register of Kuleana Claims Recorded by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands. Manuscript on file at the Hawai`i State Archives.

Native Testimony
n.d. Native Testimony Recorded by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands. Manuscript on file at the Hawai`i State Archives.

PHRI
2000 *Archaeological Inventory Survey, Kaua`ula Development Parcel, Lands of Puehuehu Iki, Pahoa, and Pola Nui, District of Lahaina, Island of Maui (TMK: 2-4-7-02:4 and 7: 2-4-7-03:1)*. Paul H. Rosendahl, Ph.D., Inc., Hilo. Prepared for Kauaula, LLC.

Pukui, M.K., S.H. Elbert, and E.T. Mookini
1973 *Place Names of Hawaii.* University of Hawaii Press, Honolulu.

Robins, J., W. Folk, and H. Hammatt
1994 *An Archaeological Inventory Survey of an Approximately 14.7 Mile Proposed Transmission Line, from Ma`alaea to Lahaina, Maui, Hawai`i.* Cultural Surveys Hawai`i, Kailua.

SHPD
2006 Letter Log No: 2006.2835 Doc No: 0608MK27

Sterling, Elspeth
1998 *Sites of Maui.* Bishop Museum Press, Honolulu.

Thrum, T.G.
1974 *Hawaiian Annual.* University of Hawaii Press, Honolulu.

Titcomb, M.
1978 *Native Use of Marine Invertebrates of Old Hawaii.* University of Hawaii Press, Honolulu.

Waihona `Aina Corporation
2000 The Māhele Database. Web address: http://www.waihona.com.

Walker, W.M.
1981 *Archaeology of Maui.* Bishop Museum Press, Honolulu.

APPENDIX A: CULTURAL MATERIAL INVENTORY

APPENDIX A

SCS PROJECT 652 TRADITIONAL ARTIFACT INVENTORY											
Site	**Field Bag #**	**Fea.**	**Unit**	**Layer**	**Depth (cmbd)**	**Depth (cmbs)**	**Artifact Type**	**Material/Species**	**Weight (grams)**	**Count**	**Remarks**
T-7	1.1	Area B	Block A	Surface	-	-	Coral	-	0.2	2	
T-7	1.2	Area B	Block A	Surface	-	-	Coral	-	26.0	1	
T-7	1.3	Area B	Block A	Surface	-	-	Marine Shell	*Conus* sp.?	0.2	1	
T-7	1.4	Area B	Block A	Surface	-	-	Marine Shell	*Cellana* sp.	0.1	1	
T-7	1.5	Area B	Block A	Surface	-	-	Marine Shell	*Cypraea* sp.	0.2	1	
T-7	2.1	Area B	Block A	Surface	-	-	Flake	Basalt	-	4	
T-7	2.2	Area B	Block A	Surface	-	-	Flake	Slag	-	1	
T-7	3.1	Area B	Block A	Surface	-	-	Glass Sherd	Colorless	-	2	
T-7	3.2	Area B	Block A	Surface	-	-	Glass Sherd	Brown Transluscent	-	1	
T-7	3.3	Area B	Block A	Surface	-	-	Ferrous Metal	-	375.9	1	
T-7	4.1	Area B	Block B	Surface	-	-	Coral	-	4.9	4	
T-7	5.1	Area B	Block B	Surface	-	-	Flake	Basalt	-	1	
T-7	6.1	Area B	Block C	Surface	-	-	Marine Shell	*Conus* sp.	4.5	4	
T-7	6.2	Area B	Block C	Surface	-	-	Marine Shell	*Cypraea* sp.	3.0	6	
T-7	6.3	Area B	Block C	Surface	-	-	Marine Shell	*Conus* sp.?	0.1	1	
T-7	7.1	Area B	Block C	Surface	-	-	Core	Slag	-	1	
T-7	8.1	Area B	Block C	Surface	-	-	Glass Sherd	While Opaque	-	1	
T-7	8.2	Area B	Block C	Surface	-	-	Glass Sherd	Blue Transluscent	-	1	Double Lipped
T-7	8.3	Area B	Block C	Surface	-	-	Pot Sherd	Bisque	-	1	Light Blue Decorat's
T-7	9.1	Area B	Block D	Surface	-	-	Marine Shell	Unidentifiable	0.3	1	
T-7	9.2	Area B	Block D	Surface	-	-	Marine Shell	*Cypraea* sp.?	0.3	1	
T-7	9.3	Area B	Block D	Surface	-	-	Marine Shell	*Cypraea* sp.	1.3	2	
T-7	9.4	Area B	Block D	Surface	-	-	Marine Shell	*Narita picea*	0.2	1	
T-7	9.5	Area B	Block D	Surface	-	-	Coral	-	5.2	2	
T-7	10.1	Area B	Block D	Surface	-	-	Historic	Glass Marble	-	1	
T-7	11.1	Area B	Block E	Surface	-	-	Marine Shell	*Cypraea* sp.	1.0	2	
T-7	11.2	Area B	Block E	Surface	-	-	Bone	Sm. Mammal	0.5	1	
T-7	12.1	Area B	Block E	Surface	-	-	Flake	Basalt	-	1	
T-7	12.2	Area B	Block E	Surface	-	-	Flake	Slag	-	1	

SCS PROJECT 652 TRADITIONAL ARTIFACT INVENTORY											
Site	**Field Bag #**	**Fea.**	**Unit**	**Layer**	**Depth (cmbd)**	**Depth (cmbs)**	**Artifact Type**	**Material/Species**	**Weight (grams)**	**Count**	**Remarks**
T-7	13.1	Area B	Block E	Surface	-	-	Glass Sherd	-	-	1	
T-7	14.1	Area B	Block F	Surface	-	-	Marine Shell	*Cypraea* sp.	1.4	2	
T-7	14.2	Area B	Block F	Surface	-	-	Marine Shell	Unidentifiable	1.9	1	
T-7	14.3	Area B	Block F	Surface	-	-	Coral	-	19.3	2	
T-7	15.1	Area B	Block F	Surface	-	-	Glass Sherd	Blue Transluscent	-	1	
T-7	16.1	Area B	Block G	Surface	-	-	Marine Shell	Unidentifiable	1.5	2	
T-7	16.2	Area B	Block G	Surface	-	-	Marine Shell	*Cypraea* sp.	0.3	1	
T-7	16.3	Area B	Block G	Surface	-	-	Marine Shell	*Cypraea* sp.	3.7	3	
T-7	17.1	Area B	Block G	Surface	-	-	Flake	Basalt	-	6	
T-7	18.1	Area B	Block G	Surface	-	-	Glass Sherd	Colorless	-	2	
T-7	18.2	Area B	Block G	Surface	-	-	Pot Sherd	Bisque	-	1	While Glaze
T-7	19.1	Area B	Block H	Surface	-	-	Marine Shell	*Cypraea* sp.	1.3	1	
T-7	19.2	Area B	Block H	Surface	-	-	Marine Shell	Unidentifiable	2.7	4	
T-7	19.3	Area B	Block H	Surface	-	-	Marine Shell	*Cypraea* sp.	3.4	1	
T-7	19.4	Area B	Block H	Surface	-	-	Coral	-	43.0	3	
T-7	20.1	Area B	Block H	Surface	-	-	Flake	Basalt	-	6	
T-7	20.2	Area B	Block H	Surface	-	-	Flake	Slag	-	5	
T-7	21.1	Area B	Block H	Surface	-	-	Historic	Alluminum	1.4	1	
T-7	21.2	Area B	Block H	Surface	-	-	Glass Sherd	Pink Transluscent	-	1	
T-7	21.3	Area B	Block H	Surface	-	-	Glass Sherd	Green Transluscent	-	2	
T-7	22.1	Area A	-	Surface	-	-	Coral		555.7	111	
T-7	22.2	Area A	-	Surface	-	-					
T-7	22.3	Area A	-	Surface	-	-					
T-7	22.4	Area A	-	Surface	-	-					
T-7	22.5	Area A	-	Surface	-	-					
T-7	22.6	Area A	-	Surface	-	-					
T-7	23.1	Area A	-	Surface	-	-	Marine Shell	*Conus* sp.	233.6	14	
T-7	23.2	Area A	-	Surface	-	-	Marine Shell	*Cypraea* sp.	7.1	37	
T-7	23.3	Area A	-	Surface	-	-	Marine Shell	*Cassis cornuta*?	14.2	1	
T-7	23.4	Area A	-	Surface	-	-	Marine Shell	*Conus* sp.	39.8	13	
T-7	23.5	Area A	-	Surface	-	-	Marine Shell	Unidentifiable	77.0	100+	

SCS PROJECT 652 TRADITIONAL ARTIFACT INVENTORY											
Site	**Field Bag #**	**Fea.**	**Unit**	**Layer**	**Depth (cmbd)**	**Depth (cmbs)**	**Artifact Type**	**Material/Species**	**Weight (grams)**	**Count**	**Remarks**
T-7	23.6	Area A	-	Surface	-	-	Marine Shell	*Drupa ricina*	16.9	3	
T-7	23.7	Area A	-	Surface	-	-	Marine Shell	*Cypraea* sp.	9.9	2	
T-7	23.8	Area A	-	Surface	-	-	Operculum	-	0.4	1	
T-7	23.9	Area A	-	Surface	-	-	Marine Shell	*Nerita neglecta* & *Nerita picea*	2.5	15	
T-7	23.10	Area A	-	Surface	-	-	Marine Shell	*Littorina* sp.	1.0	6	
T-7	23.11	Area A	-	Surface	-	-	Marine Shell	*Conus* sp.	1.9	2	
T-7	23.12	Area A	-	Surface	-	-	Marine Shell	*Conus* sp.	2.8	1	
T-7	23.13	Area A	-	Surface	-	-	Marine Shell	*Anachis miser*	0.0	1	
T-7	23.14	Area A	-	Surface	-	-	Coral	-	2.9	11	
T-7	24.1	Area A	-	Surface	-	-	Historic	Ferrous	451.5	3	Railroad Spikes
T-7	25.1	Area A	-	Surface	-	-	Glass Sherd	Green Opaque	-	2	
T-7	25.2	Area A	-	Surface	-	-	Glass Sherd	Colorless	-	3	
T-7	25.3	Area A	-	Surface	-	-	Glass Sherd	Blue Transluscent	-	1	
T-7	25.4	Area A	-	Surface	-	-	Glass Sherd	Amathyst	-	1	
T-4	19	-	-	Surface	-	-	Marine Shell	*Purpura aperta?*	41.0	1	
T-3	26.1	-	TU-1	I	-	0–28	Charcoal	-	-	-	
T-3	26.2	-	TU-1	I	-	0–28	Seeds	-	-	3	
T-3	26.3	-	TU-1	I	-	0–28	Seeds	Burned	-	6	
T-3	27.1	-	ST-1	I	-	0–24	Historic	Wire Nail	-	1	
T-3	27.2	-	ST-1	I	-	0–24	Coral	-	21.3	4	
T-3	27.3	-	ST-1	I	-	0–24	Charcoal	-	0.1	-	
T-3	27.4	-	ST-1	I	-	0–24		Slag	-	4	
T-3	28.1	-	ST-2	I	-	0–25	Land Snail	-	-	5	
T-3	28.2	-	ST-2	I	-	0–25	Historic	Cement	-	1	
T-3	28.3	-	ST-2	I	-	0–25		Slag	-	11	
T-3	29.1	-	ST-3	II	32	-	Charcoal	-	1.0	-	
T-3	30.1	-	ST-5	I	40–46	-	Glass Sherd	Irridescent/Colorless	-	3	
T-3	31.1	-	ST-5	II	41	-	Charcoal	-	0.0	-	
T-3	32.1	-	ST-5	II	45	-	Charcoal	-	0.0	-	

SCS PROJECT 652 TRADITIONAL ARTIFACT INVENTORY											
Site	**Field Bag #**	**Fea.**	**Unit**	**Layer**	**Depth (cmbd)**	**Depth (cmbs)**	**Artifact Type**	**Material/Species**	**Weight (grams)**	**Count**	**Remarks**
T-3	33.1	-	Backhoe Trench 6	I	-	7–17	Soil Sample	-	-	-	
T-3	34.1	-	Backhoe Trench 6	II	-	33–43	Soil Sample	-	-	-	
T-3	35.1	-	Backhoe Trench 6	III	-	60-70	Soil Sample	-	-	-	
T-3	36.1	-	Backhoe Trench 6	I	-	3-13	Soil Sample	-	-	-	
T-3	37.1	-	Backhoe Trench 6	II	-	33-43	Soil Sample	-	-	-	
T-3	38.1	-	Backhoe Trench 6	III	-	67-72	Soil Sample	-	-	-	
T-3	39.1	-	Backhoe Trench 7	I	-	0-10	Soil Sample	-	-	-	
T-3	40.1	-	Backhoe Trench 7	IIA	-	18-28	Soil Sample	-	-	-	
T-3	41.1	-	Backhoe Trench 7	IIB	-	46-56	Soil Sample	-	-	-	
T-3	42.1	-	Backhoe Trench 7	III	-	60-70	Soil Sample	-	-	-	
T-3	43.1	-	Backhoe Trench 7	I	-	8-14	Soil Sample	-	-	-	
T-3	44.1	-	Backhoe Trench 7	IIA	-	30-38	Soil Sample	-	-	-	
T-3	45.1	-	Backhoe Trench 7	III	-	50-55	Soil Sample	-	-	-	
T-3	46.1	-	Backhoe Trench 7	IV	-	60-65	Soil Sample	-	-	-	

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

December 16, 2021

IN REPLY REFER TO:
Project No.: 2021PR01423
Doc. No.: 2112AM08
Archaeology

Michele Chouteau McLean, Director
County of Maui Planning Department
2200 Main Street
Wailuku, HI 96793
c/o paul.fasi@co.maui.hi.us

Dear Michele Chouteau McLean:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
County of Maui Permit Application SUP2 2021/0001
Makila Ranches II Lot 10 Rock Crushing Project
Paeahu Ahupua'a, Kula District, Island of Maui
TMK: (2) 4-7-014:010 por.

This letter provides the State Historic Preservation Division's (SHPD's) review of the County of Maui Permit Application SUP2 2021/0001 for the Makila Ranches II Lot 10 Rock Crushing Project. SHPD received the submission on November 9, 2021 which included a permit application, an HRS 6E form, a letter from Pacific Rim Land Inc., and a letter form the County of Maui requesting our review of the project.

MR251011 Investment, LLC proposes the construction of a temporary rock crushing facility within a 10.8-acre project area on the subject property. The project will include the extraction and crushing of rocks and boulders within the project area. Additionally, rocks and boulders will be imported to the project area for crushing. The rock crushing will be performed with heavy equipment including an excavator, loader, crusher, screens, and conveyers. Aerial photographs show the property have been previously disturbed by grading activities including the construction of a drainage basin outside of the current project area.

A search of our records indicates SHPD reviewed and accepted an archaeological inventory survey (AIS) report (Paraso and Dega, August 2006) in a letter dated November 13, 2006 (Log No. 2006.3593, Doc. No. 0611MK07). The report identifies ten significant historic properties: SIHP #s 50-50-03-02665 (historic ranch walls), 50-50-03-04787 (Lāhainā Pump Ditch No. 1), 50-50-03-05950 (mounds), 50-50-03-05951 (water control features), 50-50-03-05952 (terraces), 50-50-03-05953 (slag scatter), 50-50-03-05954 (rock wall), 50-50-03-05955 (modified rock deposit), 50-50-03-05956 (midden and lithic scatter), 50-50-03-05957 (terrace). None of these historic properties occur within the current project area.

Based on the information provided, SHPD's determination is **"No historic properties affected"** for the current project. Pursuant to HAR §13-284-7(e), when the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD's written concurrence and historic preservation review ends. The HRS 6E historic preservation review process is ended. The permit issuance process may proceed.

Attach to the permit: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 652-1510.

EXHIBIT 11

Please contact Andrew McCallister, Maui Archaeologist IV, at andrew.mccallister@hawaii.gov for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Leilani Pulmano, Pacific Rim Land, Inc., leilanip@pacificrimland.com
Erin Mukai, Pacific Rim Land, Inc., erinm@pacificrimland.com
B. Bo Mckuin, Goodfellow Bros. LLC, bom@goodfellowbros.com
Ryan Churchhill, MR251011 Investment, LLC, ryanc@pacificrimland.com